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ABSTRACT

This learning module is designed to integrate environmental education into ninth- and tenth-grade social studies courses. The module and a parallel module designed for chemistry classes were pilot tested in Gwinnett County, Georgia in 1975-76. The module is divided into four parts. The first part alerts students to the serious problems that growth and development can bring to the environment and provides an ecological setting for analyzing alternative solutions. The second part provides factual information and various perspectives on population growth and the ways in which it has changed the county community. In the third part, waste collection and disposal and its relationship to land use planning, community health, and the quality of life are analyzed through a series of readings and activities. The fourth part introduces basic principles of careful land use as a means of preventing environmental decay. The module takes eighteen days to complete. Some of the student activities are a study of the population growth of Gwinnett County, field trips to sites of planned land use, and a simulation of a zoning board meeting. (BB)

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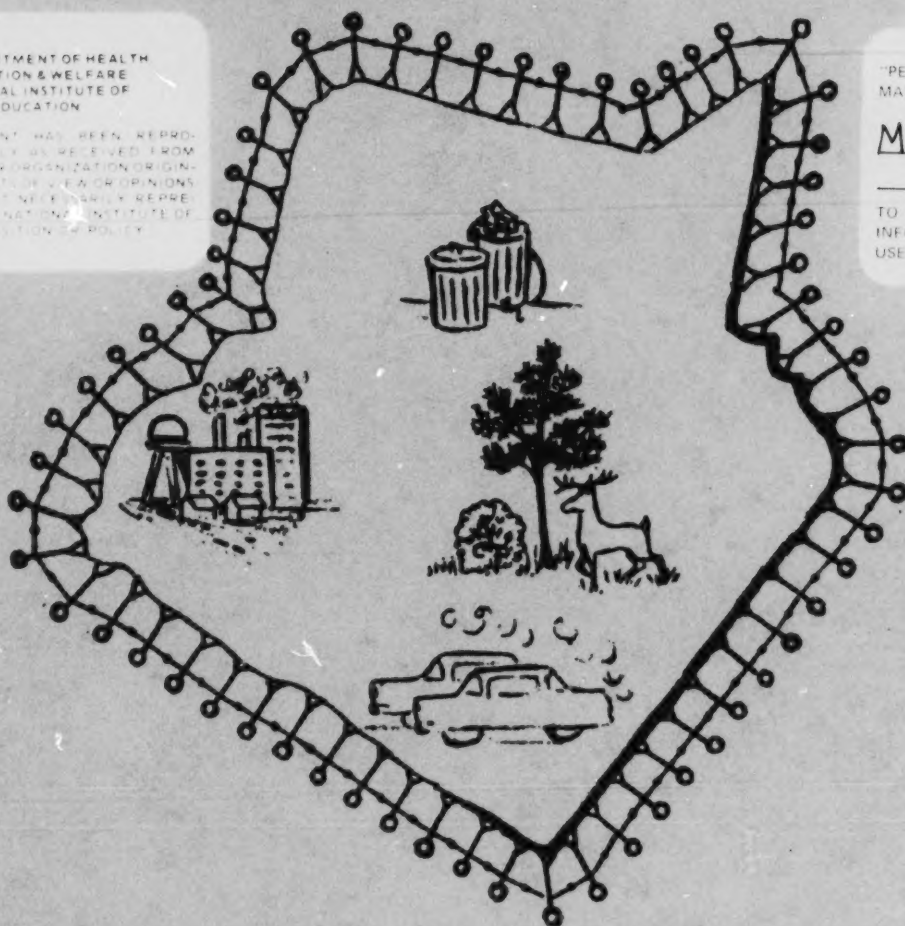
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How Much Is Too Much??

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SE 024 442

GROWTH: HOW MUCH IS TOO MUCH?

Social Studies Module

Prepared for Pilot Testing in Ninth Grade Social Studies

Gwinnett County (Georgia) School System

Revised Edition
(9-10th Grades)

Coordinated social studies and science modules developed by ENVIRONMENTAL EDUCATION FOR THE SECONDARY SCHOOLS, A Curriculum Project of the College of Education of the University of Georgia, supported by the U.S. Office of Education under the Environmental Education Act, (Project No. 522AH51215). All rights reserved.

Environmental Education for the Secondary Schools is a curriculum project which developed these instructional materials to help high school students respond intelligently to environmental policy issues. Utilizing local issues to stimulate interdisciplinary thinking and environmental problem solving, the modular materials are coordinated for social studies and natural science classes.

Project Team

Environmental Education for the Secondary Schools, 1975-1976

University of Georgia Staff:

Mary A. Hepburn, Director and Social Studies Coordinator
John W. Shrum, Science Coordinator
Marsha Scheppler, Social Studies Research Assistant
James E. Nix, Jr., Science Education Research Assistant
Carol Taylor, Science Education Research Assistant

Gwinnett County School District Coordinators and Teachers:

Richard M. Johnson, Director of Secondary Instruction
Betty Bentley, Vice-Principal, Berkmar High School
Kyle Vermillion, Materials Reviewer and Science Teacher
Dianne Bennett, Social Studies Teacher
Lynn Gatlin, Social Studies Teacher
Ruth Lewis, Science Department Head
Ruth Stockel, Social Studies Department Head

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Hi!

I'm Environmental Eddie.

*I'll be here in Gwinnett County
for a few weeks while you study
local environmental problems.*

*This module is part of an
environmental studies unit you
will be studying in your science
and social studies classes.*

*I hope you'll enjoy it
and learn a lot too!*



PART I

GETTING THE FEELING:

ENVIRONMENTAL CONSCIOUSNESS



Is this kind of decay evident in your environment?

THE GOOD LIFE IN GWINNETT

Gwinnett County has been growing and growing for the past twenty-five years. Of course the 437 square mile area has remained the same size, but the land and people within it have changed tremendously. Its growth has been in people, homes, schools, industries, highways, automobiles, stores and the other changes that more and more people bring about.

The greatest growth has occurred since 1960. Between 1960 and 1975 the population of Gwinnett nearly tripled -- increasing from 43,541 to about 120,000. It is estimated that in the mid-seventies one out of every five people who moved into the metropolitan Atlanta area moved into Gwinnett County.

When did your family come to Gwinnett? You may be one of the many students in high school whose parents moved into the county since 1960. People who chose Gwinnett County as a homesite were attracted by its open areas, green trees and farmlands, its clean air and fresh water and its easy access to jobs in the suburbs or in the city of Atlanta. Many families have come to enjoy the qualities of uncrowded surroundings. And many more are expected to move into the county. One estimate is that Gwinnett will continue to grow reaching 180,000 by 1980 and 250,000 people by 1985.

Can Gwinnett continue this growth and still offer a quality life? Many county leaders believe that it can. A statement in a booklet entitled *Gwinnett Puts It All Together*, prepared for the Board of

County Commissioners in 1974, claims that this county has not suffered "rampant, unbridled growth." The rate of county growth is described as "healthy" and a good future is projected:

Gwinnett County, the second largest of Atlanta's five core counties, lies in the direct path of the fastest growing corridor in the metropolitan area. New industries are locating here at an unprecedented rate. Officials estimate that during the last five years a new industry has moved into Gwinnett County every ten days, adding an average of eight new jobs each day to its employment base.

This economic expansion is expected to continue at a dramatic, yet healthy pace. . . .

Some people in Gwinnett, however, are concerned that this dramatic and rapid growth of population may not be completely "healthy." They point to resulting problems with crowding, pollution, waste disposal, land decay and transportation and fear that these problems could damage the quality of life in the county in the future. If too many people come to share the good life in Gwinnett, it may not continue to be so "good."

The four 1986 news items below show a future where growth has contributed to some major environmental problems. As you read each of these fictional news stories, try to decide if this could happen in Gwinnett County by 1986.

THE HOME WEEKLY
June 8, 1986

RED FEVER ATTRIBUTED TO GARBAGE

LAWRENCEVILLE - The national Communicable Disease Center in Atlanta has issued a warning to Gwinnett County's health officials that immediate steps must be taken to halt garbage dumping in the county. CDC's investigation into the epidemic of the serious intestinal disease known as "the red fever" revealed that it is probably being carried to humans by animals which have been in the vicinity of infested garbage or animals which have contracted it from other animals.

Gwinnett County Commissioners held an emergency meeting which lasted over four hours Thursday evening to try to work out a solution to dumping on private property and public roadsides. Commission Chairman Phil Summers reviewed the solid waste removal policy of the county and listed the problems that had arisen in recent years. He urged that some new approach be considered. "Poor service and increased collection fees along with the effects of the depressed economy have caused many families to withdraw from service contracts at the end of the contract-year," Summers said.

Commissioner Tom Winkle claimed, "We have more illegal dumping and illegal burning of garbage than we have ever had in this county." He proposed that the county government initiate a complete pickup and disposal service for all residents which would be paid for by county taxes.

Garbage collection in the county has been handled for a number of years by private firms franchised by the county commissioners. Increasing population and rising costs have been cited as causes for reduced efficiency and several recent increases in collection fees.

Commissioner Wanda White cautioned that if the county took over the garbage collection and disposal program it would drive up local property taxes and cause "a big uproar" from property owners in this county.

Chairman Summers outlined several other options for reducing the health hazard from illegally dumped garbage. One solution offered was increasing the severity of the penalty for dumping to a \$300 fine and four-days assistance labor with county road crews out to clean up dumped garbage.

GWINNETT DAILY NEWS
August 15, 1986

SMOG PERSISTS

LAWRENCEVILLE - Six more deaths in the Gwinnett-DeKalb-Rockdale area have been attributed to the heavy smog which has plagued the three-county area east of Atlanta this past week. The Disease Control Center in Atlanta reported the additional deaths Tuesday afternoon noting that the total number of deaths attributable to the week-long "black mist" has risen to fifteen.

This blackout is the worst to hit the southeast since the spring of 1982. Then a stagnant air mass laden with industrial and automotive pollutants darkened a heavily populated 140-square-mile area east of Birmingham, Alabama, for several days causing at least five known deaths and numerous lung ailments.

Officials of the State Division of Health have advised residents in the hardest hit southern sections of the three counties to take precautions not to spend more than 15 minutes at a time outdoors especially if they have such lung conditions as asthma, bronchitis, or emphysema. Use of air conditioners with clean filters has been urged. Work on all outdoor projects in the area has been halted. Construction workers, sanitation workers and other outdoor laborers have been notified to remain at home.

The State Patrol issued an advisory to motorists that visibility was limited on some sections of Interstate Highway 285 and portions of U.S. 78 and Ga. 124 where dense smog carrying heavily residues of hydrocarbons and auto fumes has settled.

Meteorologists are predicting that the temperature inversion which has trapped the polluted air will be broken up by a cool front moving into the area from the northeast by Thursday night or Friday.



GWINNETT DAILY NEWS
July 28, 1986

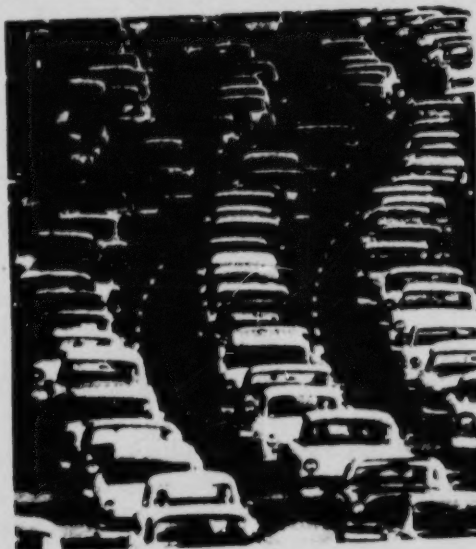
RUSH HOUR ACCIDENT

SNELLVILLE - Highway 78 in Snellville area was the scene of a large traffic jam Tuesday evening. Observers in and around the city described it as the worse traffic stoppage in six months. Nearly a thousand cars were stalled for nearly three hours in both directions. During the evening rush hour a tractor-trailer jackknifed and turned over across the road spilling hundreds of bags of powdered pesticides from the side of the shattered trailer.

Driver Newland Nesmith, reportedly enroute to Washington, Georgia, was seriously injured in the accident. Police, ambulance and wreckers had difficulty getting to the overturned vehicle which covered a section of road between Loganville and Snellville not readily accessible by crossroads.

Officials from the area state patrol post were reportedly concerned about possible toxic effects of the pesticides that might be carried in the warm 20-mile-an-hour winds. To prevent the chemical powders from being blown into nearby residential areas, county police and state patrolmen sought to cover over the powder with large sheets of plastic until a road crew could be moved in to clean it up.

Waiting in the hot sunshine, impatient motorists tempers were short, and at least two scuffles broke out. Few drivers in the bumper-to-bumper line knew what had stopped the traffic in and out of Snellville. One driver returning from work off the Stone Mountain Expressway told reporters that he had waited for 1/2 hour before he had walked a half mile to a small restaurant and waited in line fifteen minutes to get a cold coke and a hamburger. "It's usually real slow getting home on this road. Sometimes it takes two hours to get from Stone Mountain to Monroe in the heavy traffic. But tonight I reckon I'll have to sleep in my truck! I'm gettin' mighty sick of this drive."



THE HOME WEEKLY
September 5, 1986

NORCROSS PROHIBITS ADDITIONAL POPULATION

NORCROSS - The Norcross city council at its Wednesday evening meeting has decided by a unanimous vote of all five members to allow no additional residential building permits. The move is an attempt to halt further increases in Norcross's mushrooming population. Since 1950 when the city had a population of 1,340 the number of residents has increased to seven times that size. The last estimate from the Atlanta Regional Commission showed Norcross as having just over 9,000 population.

City officials claim that the city's rapid growth has gone beyond the point of comfort. To prevent further crowding the council has tried to discourage the influx of new families by informal means. However, they found that some realtors did not cooperate. Council members claim that their only legal recourse is to refuse to issue building permits for condominiums, apartments and one family residences. It is expected that the council decision will be challenged in court by several developers.

These stories are fictional but they concern several types of environmental problems that have troubled this county, other parts of Georgia and the country.

Think About This

1. Consider each one of the situations described in the news stories.
Do you think it could happen in Gwinnett County in the near future?
2. What actions by local government or by private individuals in the 1970s could prevent these environmental situations from occurring in the 1980s?

KNOW YOUR SURROUNDINGS: GAINING AN ENVIRONMENTAL CONSCIOUSNESS

The news stories of the future which you have read are concerned with conditions of the environment. The *environment* is our surroundings. It is made up of a combination of living and non-living things. It includes the plants, animals and people as well as the soil, water and air. The condition of the environment around us makes an important difference in our comfort and our well-being. Living, working or travelling in an unhealthy or poor quality environment can have negative effects on our physical and mental health -- leading to illness, stress and depression in some cases. We are dependent on the air, sunlight, soil, plants and animals in our environment for our own well being.

The scientific study of the environment is *ecology*. Ecologists study the relationships between living and non-living things and between living things in the natural systems on earth (known as "eco-systems.") The words "environment" and "ecology" are relatively new words in our daily discussions because public concern over the conditions of our surroundings is relatively recent.

For many years most Georgians and most Americans considered clean air, clean water, rich soil and supplies of timber and minerals to be limitless. Much of the decay that we find in our surroundings is a result of man's activity. For centuries people have treated their natural surroundings as something to be used. They have not been aware of the overall natural system in which man and other living (biotic) and non-living (abiotic) things are interdependent.

It has been common for people to exploit the water, air and land in any manner that was to their own immediate personal advantage. They did not consider the future effects of their actions -- on other people and on the natural surroundings. Consequently, the air in some areas is so heavily polluted with soot and fumes that it is damaging to the eyes and lungs of people who breathe it. The land surface is so eroded and so much soil washed away in some areas that it is hardly suitable for any use. The water is so polluted in some streams and lakes that the fish have died and the water is undrinkable. The land surface in some areas is so crowded with people, buildings and machines that the people suffer mental and physical discomforts from the crowding, noise and congestion.

Not until the late 1960s did Georgians and other Americans begin to develop an awareness of how important the condition of man's natural surroundings is to his well being. The limits of natural resources and the effects of human damage to parts of the natural system began to be issues of public concern.

The people who came to Gwinnett County in the early sixties found what appeared to be "unlimited" acres of pasturelands and woodlands on which to build homes, highways, apartment houses, shopping centers, factories and office buildings. It was not until the late 1960s that the county leaders began to be seriously concerned about the quality of the development and growth that was rapidly taking place in the county. Interest in the environment began to influence governmental regulations and plans for the county.

Throughout Georgia and the nation, the public concern over the quality and quantity of our national resources has grown. Today environmental problems are major issues in government and politics, in business and agriculture, in social and civic groups and among individual citizens. Many of the decisions which must be made regarding public and private policies must take into account the way the environment will affect us and the way we will affect it.

EVERYTHING IN CHICAGO IS DETERIORATING
 THE CITIES AS WE KNOW THEM HAVE HAD IT
 NITRATES AND FLUORIDES SEEPING INTO UNDERGROUND WATERWAYS
 80% OF OLD PEOPLE ARE GETTING HEADACHES BUT TRY AND GET ELECTED ON AN ANTI-POLLUTION PLATFORM
 FRUITS AND VEGETABLES ARE LOADED WITH TOXIC HYDROCARBONS
 I'LL NEVER EAT SWORDFISH AGAIN
 OF COURSE THE WHOLE ECOSYSTEM IS BREAKING DOWN
 ENZYMES ARE IN THE ESTUARIES
 WE MEASANTS IN ALBERTA, FOR EXAMPLE
 I'M HERE TO TELL YOU WHAT YOU'LL FIND IN A SINGLE SLICE OF WHITE BREAD
 CON ED! DON'T TALK TO ME ABOUT CON ED!
 THE MEDIA SUPPRESSED ALL THE MUTATION STORIES
 TONS OF GARBAGE WERE WASTED
 MAYBE ARIZONA IS JUST AS BAD
 IT'S ALL THE SAME STUFF THEY PUT IN DETERGENTS
 WHEN I THINK ABOUT THOSE POOR PINE TREES NEAR LOS ANGELES
 95% OF THE PEOPLE LIVING ON 5% OF THE LAND
 AND WHEN DID YOU LAST SEE A BLUE BIRD?



Class Activity

Your Environment: *Survival or Quality?*

Imagine that because of a catastrophe all of the students in the class have been suddenly trapped in the school room. Look around you. Could you survive for a week with only the items that are in the classroom now? What important basic needs are missing from the room?

Suppose that although your class is trapped and no person may leave or enter the room for a week, an emergency squad has figured out a way to provide your class with a large "care package." The emergency squad will attempt to push through the doorway ten items that you request. Each of these items must be something that can be easily carried through the classroom doorway. What ten items would you ask for? Consider your survival and your comfort.

EACH STUDENT IN THE CLASS SHOULD MAKE A PERSONAL LIST OF TEN ITEMS ON A SHEET OF PAPER IN EIGHT MINUTES.

REQUESTED ITEMS SHOULD THEN BE LISTED ON THE BOARD IN AN EFFORT TO DETERMINE THE MOST MENTIONED ITEMS IN THE CLASS.

To decide what ten items will be requested for the whole group, the class should be divided approximately in half to talk over the items on the board and come to some agreement or *consensus* on which ten items to request. A list should be agreed upon in 10 minutes. You may find that you will have to trade off some item that you value so that another item which you consider more important is kept on the list. In some cases a majority vote may have to be taken in the group.

Then, the class as a whole, in an additional ten minutes, should decide on a *final list of 10 items* which will satisfy a majority of the members of the class.



Look over this final list. What things which are not on the list would you truly miss? Would you miss being outdoors and having open space to hike in or play in? Would you miss the shade of the trees? Would you miss grass? Ponds, rivers and lakes? Would you miss the birds and certain other animals such as a pet cat or dog? Would you miss the comfort of being with your family in your apartment or home? Would you miss riding on a bicycle or in a car and enjoying the scenery as you go?

Probably most members of the class have requested "necessities" first such as edible food and drinkable water. Probably many students asked for a portable toilet and for a portable cooking and heating stove to be brought in. Possibly you asked for a sleeping bag or blankets and some pillows.

Did you consider having enough clean air to breathe? Were you concerned about having some privacy -- away from the "crowd" of students and the noise. Perhaps you asked for a small tent. Did you consider asking for a change of clothing? Did you list a tub of water for bathing?

Perhaps you asked for a radio to provide news of the "outside world" and music for your enjoyment. Or maybe you asked for some books to read, or a television set or some games to play. A week is a long time to have to remain in one place and you could easily become restless without some "interesting" things to do.

In addition to several basic necessities for your survival, you have listed items which you desire for your comfort. In naming these items you have expressed your personal preferences. These are probably items that you *value* and which contribute to your personal feeling of well being and happiness or *quality living*.

Think of people, plants, animals and objects which you enjoy in your daily life and which you would seriously miss while trapped in this school room.

Based on what you have found out about what you and your classmates 1) need for survival and 2) desire for comfort and happiness, answer the following questions.

1. What are man's basic needs for *survival*?
2. What do you consider to be the requirements for the comfort and happiness of a *quality* life.
3. How does your idea of quality living differ from the ideas expressed by your classmates?
4. How are questions of survival and quality living important to the people of Gwinnett County?
5. How might the residents of the county reach some *consensus* on the requirements for a quality life in Gwinnett County?
6. Did you find that the time limit on the class decision put pressure on individuals to compromise? This kind of time-pressure is sometimes evident in the decisions of the board of county commissioners or the city council. What might cause them to hurry to enact an environmental ordinance?

THE SYSTEM WE LIVE IN: BECOMING ECOLOGICALLY AWARE

To better understand how to provide for a quality life we must become aware of the environmental system we live in. If you really had been trapped in a school classroom for a week, you would not only get to know a great deal about the students living in your immediate environment, but you would probably become highly conscious of the characteristics of the room.

You would take careful notice of how much space is in the room, whether there are windows to allow sunlight in, whether the windows open to let in fresh air, whether there were shades, the texture and hardness of the floors, walls and furniture, and other details of your surroundings. You would probably take such details into consideration in attempting to survive and to live as comfortably and as happily as possible in the room.

The *natural* surroundings or environment of the county in which you live require similar attention. You need to know about its characteristics in order to live better in it. Many people are not conscious of their natural physical surroundings. They use the environment but are hardly aware that they depend on it. Many people are not aware of the part that man plays in a natural *system*.

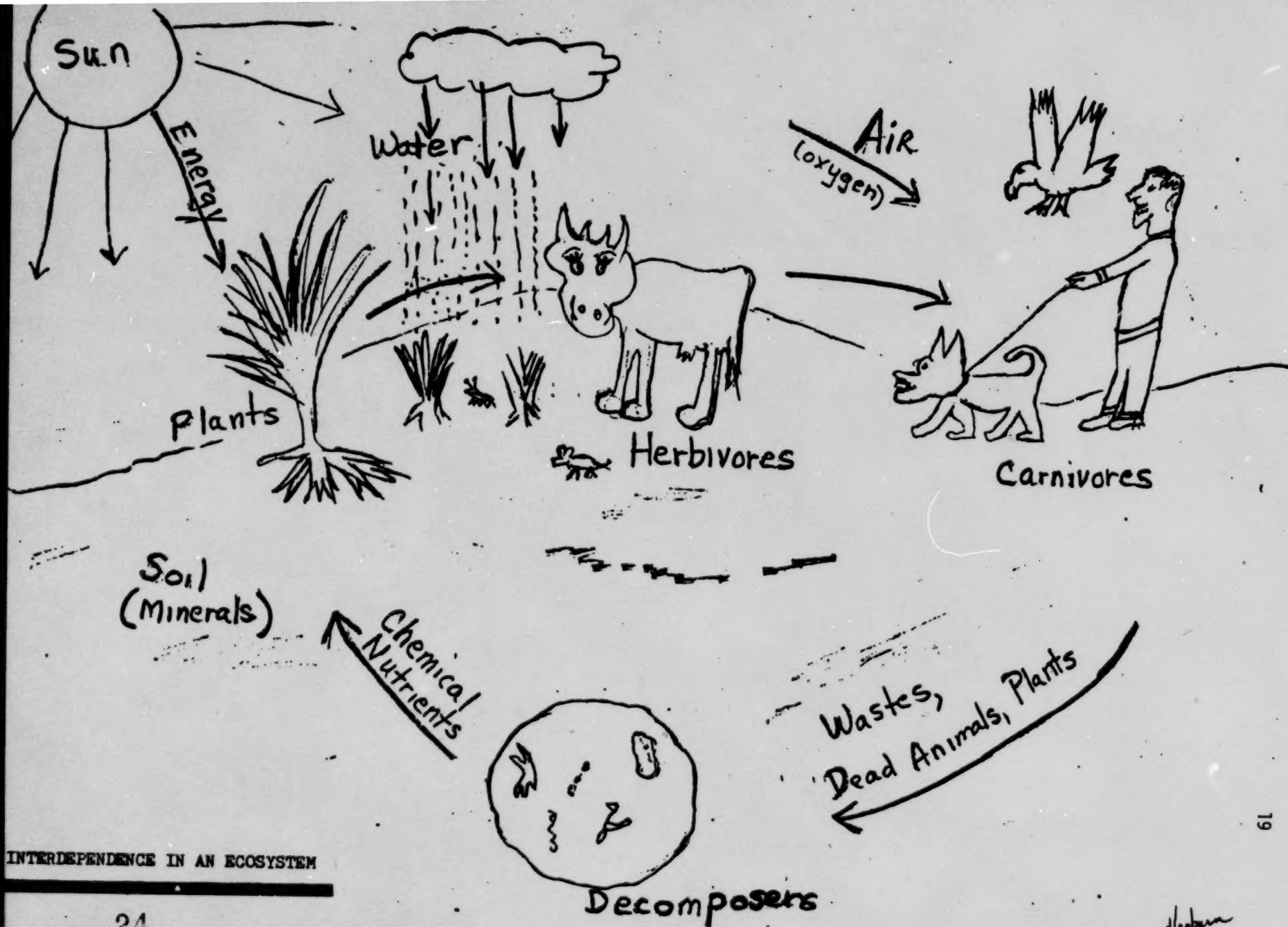
The combination of living things and their physical surroundings interacting as a unified whole is an *ecosystem*. Each living (biotic) and non-living (abiotic) thing in the system contributes something to it, and each depends on the others for the system to continue. Any

place in nature where we find biotic and abiotic things linked together in an interdependent life chain is an *ecosystem*.

Within the ecosystem there must be a diversity of life, a food supply, a way of changing the food into energy, a way of disposing of dead matter and waste and a way of reusing waste to make food and energy again. The ecosystem when it is functioning well keeps up a circular flow of life.

From the simplified diagram of a land ecosystem on the next page you may get an idea of the ways that man, other animals, plants, minerals, sunlight and air play a part in the system. (You will be studying this in the context of population interactions in science class; this is just a brief summary here.)

The plants provide food for the *herbivores* (plant-eating animals), and the herbivores are the food of the *carnivores* (animal eaters). The wastes of the carnivores and the dead plants and animals become the food of tiny animals and plants known as *decomposers*. The decomposers break down the waste matter or dead matter into chemicals or *nutrients* which then help to enrich the soil. Chemicals and minerals in the soil provide food for plants. Water gives the needed moisture for living things. Air protects plants and animals from the sun's strongest rays. Air also contains gases which plants and animals breathe. Sunlight provides the energy which makes the green plants grow. Herbivores then feed on the plants, and the system has made a full cycle.



INTERDEPENDENCE IN AN ECOSYSTEM

If there is a change of conditions in any part of the system it affects the rest of the system. For example, if a severe drought greatly reduced the quantity of plant life, then the herbivores in the system would suffer from the shortage of food which would reduce the numbers of herbivores. This, in turn, would cause a sharp cut in the food supply for carnivores. The resulting increase in the number of dead carnivores would overburden the decomposing organisms which would not recycle all of the dead matter into nutrients. Soil composition would then decline resulting in poor conditions for plant growth. This land system would then have less ability to support living things.

There are many ecosystems. They may be large or small. A small terrarium is an ecosystem, so is a swamp or a pond or a forest. The surface of the earth forms a great large ecosystem--the *biosphere*.

When a system is functioning well and there are no great shortages or oversupplies among the system's diverse components, then the system is said to be in *balance or equilibrium*.

There is just so much life-giving nourishment in a system and it must be used over and over again. Man as one of the animals in the ecosystem eats both plants and animals. Hence, man is dependent on all of the components of the system which are necessary to the cycle of life within it. Man, therefore, has a responsibility to help maintain the *balance* of the ecosystem within which he lives.

PART II

GETTING THE FACTS:

GROWTH AND ITS CONSEQUENCES

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Think About This

Look back at the diagram of the land ecosystem and consider each of the following:

1. What might happen if there were a sudden large increase in the number of carnivores in the system? Trace the likely effects throughout the system.
2. How is man dependent on tiny decomposing animals and plants?
3. What would happen if man dumped a great oversupply of garbage and sewage into the system?
4. Suppose that a dense, dark cloud of dirty air ("smog") drifts into this ecosystem and greatly reduces the quantity of sunlight which enters the system. What effect would this have on other parts of the system including man?

THE HILLS OF IXOPO *

There is a lovely road
that runs from Ixopo into the hills.
These hills are grass covered and rolling
and they are lovely beyond any singing of it.
About you there is grass and bracken and you may hear
the forlorn crying of the ti-ti-ho-ya bird.
The grass of the veld is rich and matted,
you cannot see the soil.
The grass holds the rain and mist.
They seep into the ground, feeding the streams in every clove.
The clove is cool and green, and lovely beyond any singing of it.

Where you stand the grass is rich and matted,
but the green hills break down.
They fall to the valley below and falling change.
For they grow red and bare;
They cannot hold the rain and mist;
the streams run dry in the cloves.
Too many cattle feed on the grass;
it is not kept or guarded or cared for.
It no longer keeps men, guards men, cares for men.
The ti-ti-ho-ya cries here no more.
The great red hills stand desolate.
And the earth has torn away like flesh.
These are valleys of old men and old women.
The men are away,
The young men and the girls are away.
The soil cannot keep them any more.

* From "Lost in the Stars," a musical by Maxwell Anderson and Kurt Weill

5. The lyrics of the song above tell of the changing scene along a road which runs through hills and a valley near a town called Ixopo. Does the ecological system seem to be in balance in the hills? In the valley? Explain your answer based on the diagram of a land ecosystem in this chapter.



The Greek letter Theta has become a symbol of ecological awareness. Theta is a warning of death and thus symbolizes that the biosphere is threatened.

POPULATION: THE WAY GWINNETT GREW

More and More People

Class Activity



This class exercise will demonstrate the way Gwinnett County's population has grown over the past 25 years. With a piece of chalk (or with masking tape) roughly outline the shape of Gwinnett County, making it approximately 5 ft. x 5 ft., on an open area of the floor of your classroom.

To represent Gwinnett's County's population in 1950, five students should stand within the outline. Each one of these students represents about 6,000 people.

To show the population growth by 1960, *two more* students should get inside the outline so that the total is now seven.

For 1968 increase the number of students by *three more* to make a total of 10. This represents approximately 60,000 people who were in the county then.

Two additional students should get inside the outline, for a total of twelve, to show how the population grew by 1970.

You will probably find that the area inside the outline is getting crowded now. But the number of people continued to increase. The 1972 population figure requires the addition of *two more* students to make 14.

Four more persons must be added to represent the 1970 population growth. Eighteen students should be inside the county outline by this time. And if we were to show the estimated number of people in the county in 1975 two additional people would have to get into the area of the outline to make a total of 20 representing about 120,000 people.

This gives you an idea of how your county's population has grown in recent years. Each additional student added to the space within the county outline represented an increase of approximately 6,000 people. The county's population in 1950 was 32,320. By 1974 it had more than tripled with a population of 109,600. Recent estimates indicate that there are between 115,000 and 128,000 people living here now. We would have had to squeeze 20 people into the outlined space on the floor to represent a current population of 120,000.

This method of demonstrating population growth dramatizes the rate of growth and the effects of crowding, but it tends to exaggerate the problem of space. Your floor outline of Gwinnett is approximately 5 feet by 5 feet or 25 square feet. Each square

foot in that outline actually represents approximately 17 square miles of the county's total 437 square miles. Hence Gwinnett residents are not yet as crowded together as you were in the demonstration.

You should keep in mind, however, that not all of the county's 437 square miles can be considered a potential housing area for its people. Much of Gwinnett's land is taken up by lakes, ponds, farmland, highways, parks, business centers, factories, office buildings, schools, churches and government facilities. Therefore, each increase in numbers of people living in Gwinnett County should be considered for its overall effects on the quality of living here. More population means more *people* building homes, driving the streets and roads, using the water, producing garbage and sewage, shopping in the stores, using lakes and parks for recreation, placing more children in the schools and requiring more services from local government.

* * * * *

Your School is a Mirror

Your school probably reflects the growth of the community around it. Find out what you can about the pattern of population growth in your high school in recent years. What effects has growth had on the building, the size of classes, school activities and the school grounds?



Let's Look at the Figures

To get a better picture of how the county grew we will need to look over population figures. There are thirteen cities plus large suburban and unincorporated areas in Gwinnett County. The County is the fourth largest of Georgia's 159 counties, and, according to the official 1970 U.S. Census, it is the eleventh largest in population. Between 1960 and 1970 it was one of the top seven fastest-growing counties in the state--along with Clayton, Cobb, Rockdale, Chattahoochee, Columbus and DeKalb Counties. (Note that most of the other rapid-growth counties are also in the Atlanta-metropolitan area.)

The chart on page 28 shows the population figures for the county as a whole and for each city. The 1950, 1960 and 1970 figures are from the U.S. Census Report. The figures for the years in between are estimates calculated by the Atlanta Regional Commission.

Note that only a portion of Loganville is in Gwinnett County. The other part is in Walton County. Also note that three of the municipalities --Berkeley Lake, Lilburn and Loganville-- had not been formed by 1950.

Look over the population chart on the next page and then answer the questions that follow.

POPULATION IN GWINNETT COUNTY *

	<u>1950</u>	<u>1960</u>	<u>1968</u>	<u>1970</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>
Gwinnett County	32,320	43,541	59,800	72,349	86,500	100,000	109,600
Berkeley Lake	0	94	155	219	223	256	235
Buford	3,812	4,168	3,946	4,640	4,787	5,089	5,020
Dacula	369	440	457	782	820	875	1,057
Duluth	842	1,483	1,675	1,810	1,812	1,899	2,009
Grayson	227	282	342	366	354	360	366
Lawrenceville	2,932	3,804	4,561	5,115	5,859	6,411	6,633
Lilburn	0	753	1,333	1,668	2,029	2,135	2,287
Loganville (part)	0	0	178	200	188	189	190
Norcross	1,340	1,605	2,217	2,755	3,097	3,752	3,930
Rest Haven	147	167	145	188	177	170	258
Snellville	309	468	1,304	1,990	4,300	4,708	5,618
Sugar Hill	783	1,175	1,573	1,745	1,965	2,210	2,379
Suwanee	357	541	601	615	642	709	693

* U.S. Census and Atlanta Regional Commission

1. What was the rate of growth from 1960 to 1970?

[The rate of growth is figured by subtracting the earlier population figure from the later one. Then divide the difference by the earlier figure. For example, the growth rate from 1950 to 1960 is figured this way:

$$\begin{array}{r} 43,541 \\ -32,320 \\ \hline 11,221 \end{array} \quad \begin{array}{r} 32,320 \\ \times .347 \\ \hline 11,221.000 \end{array} = 34.7\%$$

The average annual rate of growth = $34.7 \div 10$ (years) = 3.47%

2. What was the average annual growth rate between 1960 and 1970?
3. The 1975 population is estimated at 120,000. Based on that estimate what was the average annual rate of population growth between 1970 and 1975? Compare this with the average annual rate of growth between 1960 to 1970. Is Gwinnett County's population growth rate increasing, decreasing or remaining about the same?
4. Which city was the largest in the county in 1950? In 1960? In 1968? In 1974?
5. Which city was second largest in the county in 1950? In 1960? In 1968? In 1974?
6. Which city experienced the greatest rate of population growth between 1960 and 1974?



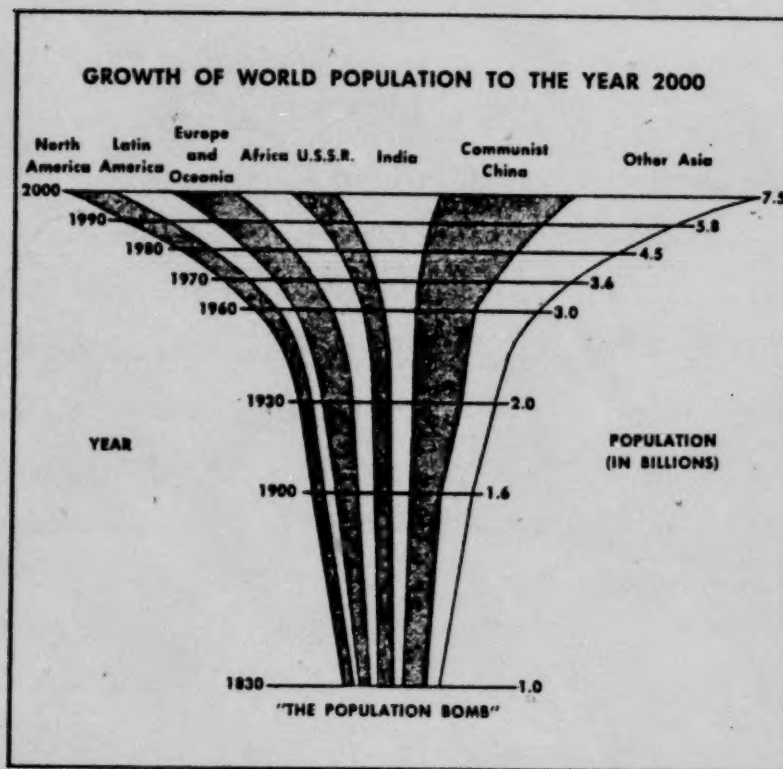
What Factors Influence Population?

What causes a population to become larger or smaller or remain about the same? All types of populations including colonies of yeasts, mice, birds, deer, bears and people are influenced by three factors: *birth, death and migration.*

Animals usually breed until limited by such natural means as disease, predation and starvation. Man, unlike other animals, has been able to develop methods to reduce birth and death rates. This is evident in a highly developed nation like the United States where advances in medical research and technology have lowered both the death rate and birth rate.

Currently the United States with an estimated population of 220 million people has a birth rate of around 10 per thousand -- a drop of 15 from the 1957 birth rate of around 25 per thousand. The death rate in the United States is about 9 per thousand. Thus our population is said to be at *replacement level* -- that is, births and deaths are nearly at the same level. If this continues for 60 to 70 years our national population would be considered *stabilized*.

However, the population of the United States is only a "drop in the bucket" when compared to the 4 billion people in the world. World population is currently increasing at an annual rate of about 2.2%. That may not seem like much, especially when compared to Gwinnett County's annual growth rate. But a 2.2% increase in world population means 88 billion more people added to the earth in a year. The population of the world could double in about 30 years if the present rate of growth continues.



Source: Department of State. Reprinted in *Environmental Quality: First Annual Report of the Council on Environmental Quality*, 1970.

Within the world's annual average 2% growth figure, however, there are notable differences between the developed and the underdeveloped countries. About two-thirds of the world is still increasing its population and in the underdeveloped areas the rate of increase is disturbingly high relative to the amount of food, shelter and general economic support available. For example, while the rates of population increase in Europe's 456 million people is only about .8%, Asia's 1990 million people are increasing by an annual rate of 2%, Latin

America's 275 million population is increasing by about 2.9% and Africa's 344 million people are increasing by 2.4%.

How many people can the earth support? How much food can be produced by the portions of the earth which are suitable for farming which are not used to house or employ all these people. How can we maintain supplies of timber, oil and ores which are important to the standard of living in every country? Obviously, the population problem extends beyond Gwinnett to encompass the nation and the world. While our purpose is to examine progress and problems of the local environment, we should keep in mind that these problems of land, resources and man are world-wide in scope.

Growth Factors in Gwinnett

In the United States over the last several decades population increases have been mainly attributable to lower death rates and increases in births with only minor effects from migration. However, in Gwinnett County's growth the *major factor* has been *migration* of people from outside the county.

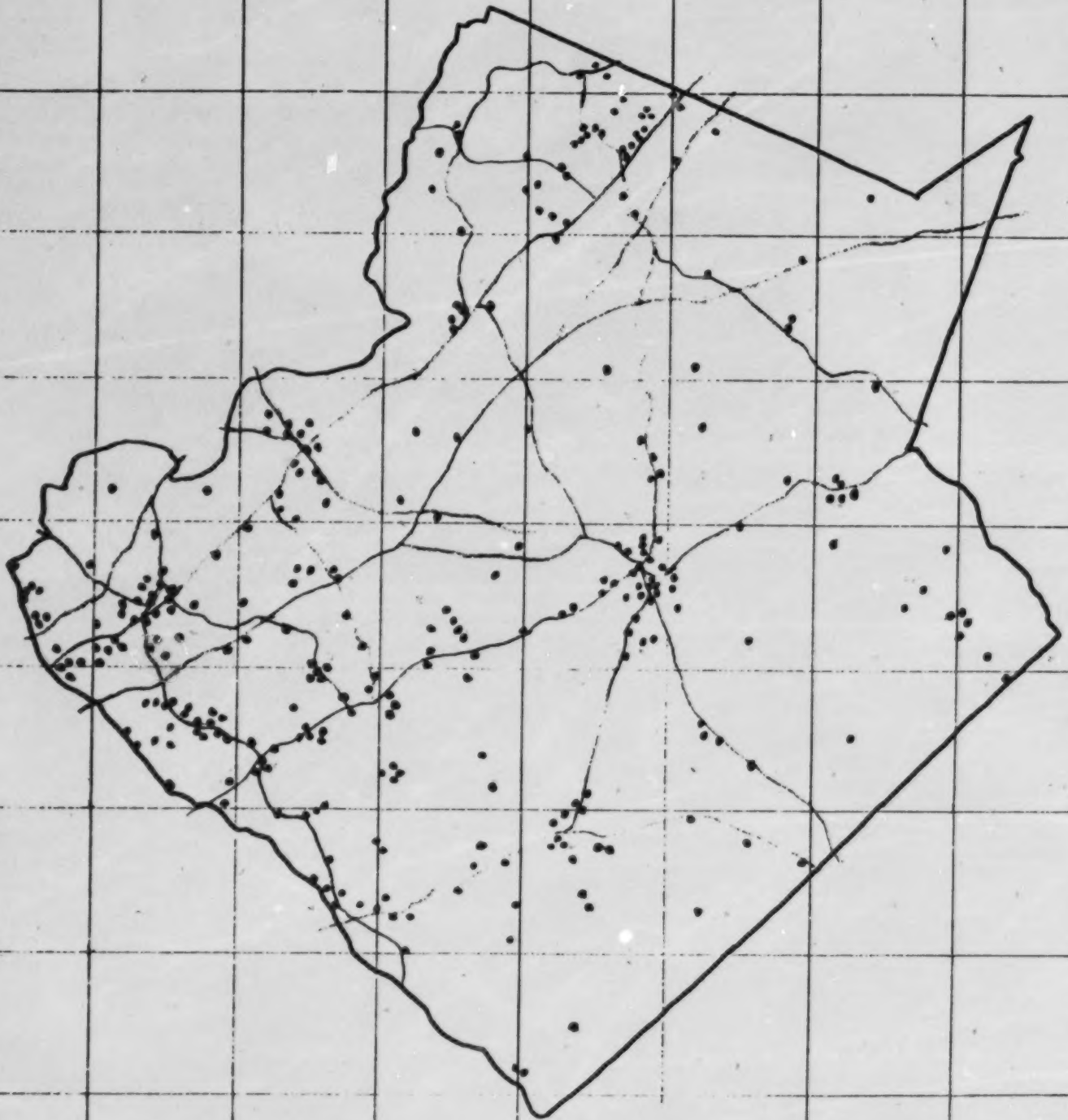
What attracted so many thousands of people to Gwinnett? Interviews with a variety of Gwinnett County citizens who watched the county grow or who came here themselves during the past twenty years revealed the following reasons why so many people moved into the county.

1. The construction of Interstate Highway 285 around Atlanta and Interstate 85 into Atlanta linked Gwinnett County to the big city and surrounding suburbs by means of wide, rapid, easy auto routes. This offered easy access to jobs, shopping and business transactions in Atlanta. It also provided a ready truck route for freight. (About 36,000 of the people who live in Gwinnett work in the central metro area.
2. Large numbers of individuals and their families desired to move out of the urban sections of the Atlanta area to live in a greener, quieter country environment. Some wished to escape racial integration in the city (sometimes called "white flight.") High living costs and higher crime rates in the city also encouraged migration. Others wanted to move out of apartments in the city to homes with yards and trees in the suburbs. Prosperity in these years made the move possible for many. and lower taxes, lower home prices, reputed good schools and a proximity to the interstate highways made Gwinnett County highly attractive as a homesite. Thousands of people moved from the city of Atlanta, Fulton County and DeKalb County.
3. Developers were attracted by land prices which were lower than in the urban counties of the metro area. Attractive green landscapes with numerous trees and a ready access to water supplies also attracted developers. There were few restrictions on where and what could be built. So, Gwinnett was developed rapidly with numerous subdivisions of single

family homes as well as apartments and condominiums which sold readily to people desiring to leave the city and made good profits for the developers.

4. Industries of various types and sizes were attracted by Gwinnett County's accessibility to Atlanta for freight delivery and other business purposes, its large areas of open land which make for easier construction, its lower land prices and lower taxes as compared to Fulton and DeKalb Counties, and its reputation for a growth and progress-oriented government. The new industries created new jobs which in turn attracted more people from Georgia and other states. (In 1974 the county reported a total of 230 industries and a total of 7,315 employees of manufacturing concerns.)
5. Business opportunities in an area of population influx attracted a number of shop keepers who opened grocery stores, clothing stores, pharmacies, furniture stores, restaurants and business men who opened insurance agencies, realestate offices and banks.

As you can see there were strong motivations for *migration* to Gwinnett County. In addition a 2.3% annual *birth rate* contributed to the population growth of the county. Moreover, the county's low *death rate* was another factor contributing to the population increase. Gwinnett's average life expectancy



1 DOT = 250 PEOPLE - BASED ON 1970 CENSUS

is 75 years. This is 3.1 years greater than the 71.9 years average found in the United States as a whole. And it is an increase of 6.8 years from the 1950 average life expectancy in Gwinnett of 68.2. In 1975 it was estimated that the men and women over 65 make up about 6% of Gwinnett's population. Hence, although the most important growth factor in the county has been migration, increasing birth rates and lower death rates have also contributed to Gwinnett's population explosion.

The growth of Gwinnett County as a suburban community fits the larger pattern of population shifts which have taken place in this country since World War Two. The density of large city population has been falling while the suburbs have been growing. One result is an increase in the number of dwellings and the use of more space to house a comparable number of people. Either because they became more prosperous and could afford to move, or because they were disenchanted with the city environment, large numbers of city people moved from multi-family dwellings (apartments, duplexes and condominiums) of the large city into single family homes in the suburbs.

Class Activity

Look over the five general reasons given for migrating to Gwinnett County. Probably many of your parents, neighbors and friends migrated to Gwinnett for one of those reasons.

1. Each member of the class should interview two adults who migrated to the county within the past 16 years to determine what attracted them to this county.
2. On the board the class should tally the numbers of people who moved to the county for each of the five reasons.



Which Way Will It Go?

"There are different ways of estimating population. One way we do it -- we take the number of building permits that have been issued, single family or multi-family units, times the ratio per unit. For the single family we use a 3.5 ratio per unit and for the multi-family we use a 2.8 ratio per unit figure to compute the population estimate. Then we devise a scale to try and project to 1980. The way the economy is now, it's hard to project anything, so you don't know which way it's going to go."

Ron West, Chief Planner, Planning & Zoning
Division of Gwinnett County Department of
Planning, Zoning and Inspection

THE EFFECTS OF RAPID POPULATION GROWTH ON THE ENVIRONMENT

Class Activity

Check on Your School Environment

Let us once again focus our attention on the population and environment of your high school. Did its population grow rapidly? What signs of rapid population growth are now visible in and around the school? Consider the classrooms, lunch-room, laboratories, halls, school yard, athletic fields and parking lot.

Are there signs of over population or crowding in the halls, classrooms or lunchroom? What about waste disposal? Is the garbage collected, stored and disposed of efficiently? What about the direction of services provided through the administrative offices of the principal and vice-principal? Have they been able to keep up with the expanded needs of a growing population? Think about the air conditioning system -- does it provide plenty of clean air to breathe? What about traffic flow in the halls between classes. Can students easily move from classrooms to lockers to classrooms? Consider noise. Are there disturbing noise levels in the school from human voices or machinery?

Consider the outdoor area around your school. Is there evidence of erosion? Do you find areas where the top soil has washed away and where plant life is sparse? Are there areas where rainfall fails to run off and flooding results? How about air pollution?

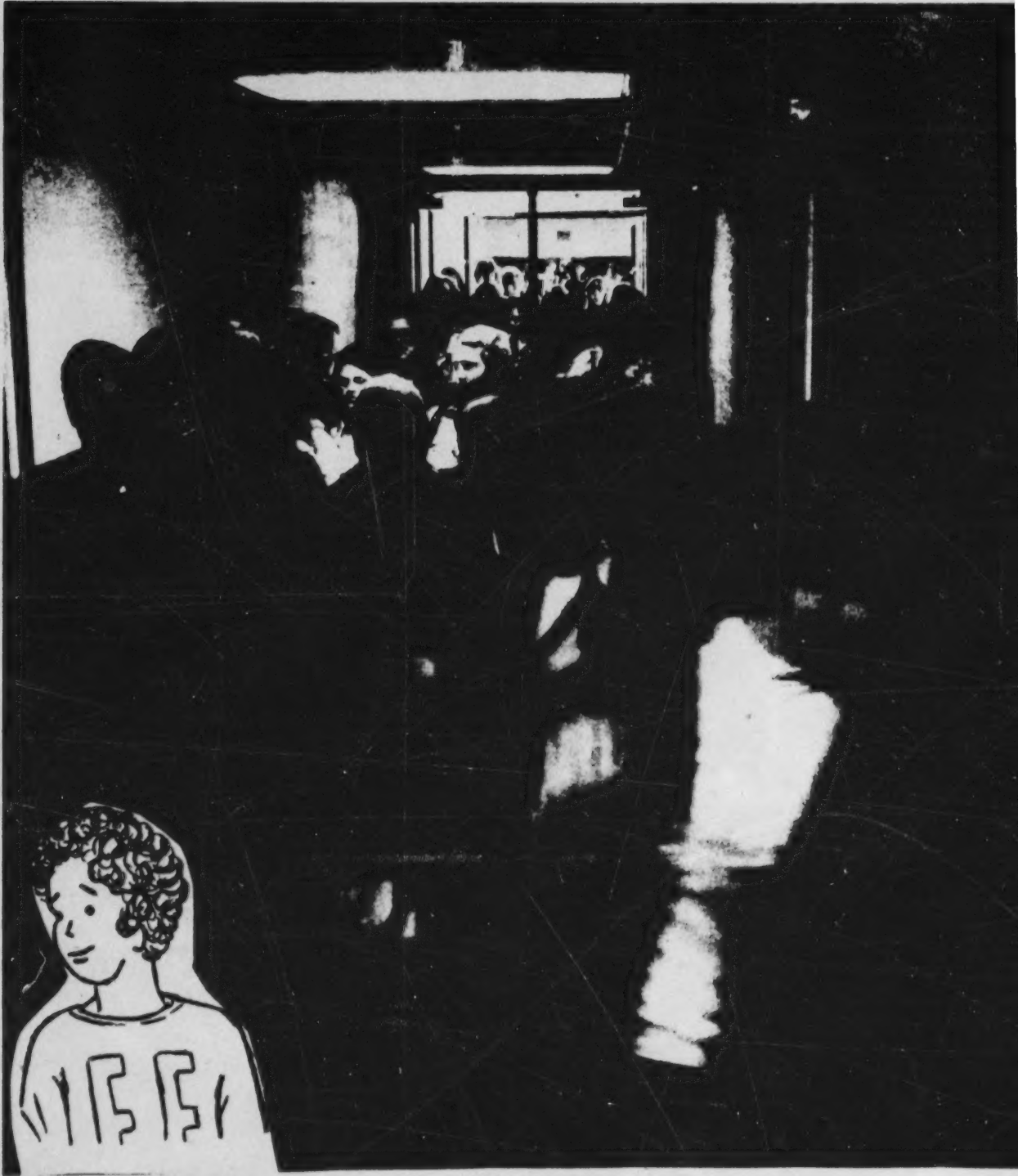
Do traffic jams in the parking lot fill the air with fumes a few minutes after school gets out? And what about the flow of traffic in the morning and at the end of the school day. What about waste disposal on the school grounds? Is there evidence of dumping?

These questions should stir your awareness of some of the environmental problems that might arise in and around a school which has grown rapidly. What other effects should be considered? On a blackboard or bulletin board list the various types of evidence of environmental decline which you find at Berkmar.

How many of these same environmental problems are found in various rapid-growth areas of the county?



Rapid population growth in the community can cause crowding in schools.



Rapid Suburban Growth

Examining the effects of growth on and around Berkmar High may have alerted you to some of the changes which a rapid increase in the population of a rural area can bring about in the biotic and abiotic surroundings of the population.

Suburban development here has been similar to the pattern of development around many large metropolitan areas in the United States. By the early seventies housing developments, shopping centers, office buildings and factory and assembly plants had replaced much of the woodlands and pasture lands once found around the perimeter of Atlanta. Development in this area of the southeast is still relatively limited when compared to the urban-suburban sprawl along eastern and western coastlines. In some metropolitan areas of the U.S. suburban development has been heavy enough and extensive enough to span from city to city. For example heavy suburban development along the eastern seaboard has linked Baltimore, Washington and Philadelphia into a super metro area referred to as a *megapolis*.

The influx of thousands and thousands of additional people into Gwinnett County in recent years has generated remarkable changes in the physical surroundings and in the plant, animal and human life of the area. Thousands and thousands of people are attracted to the county, and when they came they needed housing; they needed water; they needed shops to purchase their food, clothing and household goods; they needed transportation to get back and forth to their jobs and the shops; they needed some system of disposing of sewage and garbage; they needed energy supplies to light, heat and cool

their homes and power a variety of household, business and factory machines. They needed fire protection and police protection; they needed schools for the education of their children; and there were numerous other needs and requirements for healthy, orderly, convenient and quality living.

Soil and Drainage Problems

The construction of thousands of new homes and various types of business buildings, which both provided for and stimulated the great growth in population, resulted in extensive changes to the land. Trees and foliage were cleared. Hills were bulldozed and large open areas were prepared for development. As a result tons of soil were moved, the natural water drainage was disturbed in many cases, natural vegetation was removed and often a series of unfortunate related changes were initiated.

This chain of events happens something like this:

- A hilly wooded area beside a stream is bulldozed and cleared of all but a few trees for a housing development.
- Tons of soil, loosened by earth movers or by the effects of decreased vegetation are carried by rainwater into the stream.
- The roots, driveways and other paved or covered surfaces of the development prevent rainwater from soaking through the ground and into the underground water table. This rainwater runs off through storm sewers into the stream.

- Eventually the water table is lowered by the decreasing replenishment of ground water, and deeper and deeper wells are required for a clean water supply for these homes.
- The large amounts of soil which have washed into the stream have thus raised the level of the stream bed.
- The heavy run-off rainwaters from the development thus causes flooding in the downstream area.
- Flooding of septic tanks in some areas may cause the stream to be polluted and dangerous to the health of wildlife and people.
- Residents of the area demand that this pollution problem be eliminated by a sewerage system.
- Residents downstream demand that the stream be dredged to remove (temporarily) the danger of flooding.

And this series of patch-job solutions is likely to continue. Many people living in such developments and the developers themselves are unaware that such problems are not unavoidable; that planning to build in harmony with the natural setting rather than counter to it will not only avoid many of these problems but will, in the long run be less costly.

Loss of Farmlands

Suburban developments often cover valuable farmland. The kind of land which is appealing to a farmer is also desirable to a developer. Land which has open areas, easy access, a minimum of large rocks,

good soil of proper depth and an adequate water supply is usually good for farming, and if it is located outside an metro area which is expanding, it will attract tempting high prices that many farmers cannot resist. It is estimated that of 72 million acres in the United States which are considered *arable* (suitable for farming) about half is already covered with urban and suburban development.

Cars, Highways and Noxious Fumes

People living in a suburban area and working, shopping and doing business in the urban center and other parts of the suburbs must have some means of transportation back and forth. The major means of transportation used in Gwinnett County is the automobile. With the thousands and thousands of people who came to live in the county came thousands of automobiles.

Motor Vehicle Registration in Gwinnett County

1970	52,324
1971	60,772
1972	73,594
1973	89,491
1974	93,736
1975	98,121

The county is served by two major interstate arteries, I-85 and I-285; three U.S. highways -- 23, 29, and 78; and at least four Georgia highways. There is scheduled bus service in several directions, but the county is not a part of the Metro Atlanta Transportation Association, having voted down affiliation by referendum.

IS THAT PROGRESS IN THE AIR?



Must progress mean pollution?

Hence, automobile transportation on the county's north-south and east-west highways is very important for moving people and goods in and out of the county. On the other hand, they cause great problems of air pollution from the exhaust fumes of trucks, buses and cars; stress from time waste and waiting in traffic jams and discomfort from loud noises.

In 1975 Gwinnett County registered 98,121 motor vehicles, an increase of nearly 46,000 since 1970. Most of these can be expected to be on the road on any single workday. In addition, thousands of additional vehicles travel through the county on I-85 and other routes into and out of the metro area. Pollution from the internal combustion engines of trucks and cars is mounting daily.

The main source of air pollution is from the internal combustion engine's tailpipe emission of fumes and deposits from inefficiently burned fuel. If gasoline burned completely, it would produce only water and carbon dioxide. However, it is not burned off entirely, partly because it usually contains a variety of additives to improve effectiveness at various speeds, to reduce knocking, to minimize rust and reduce lead deposits. Evaporated gasoline from the gas tank and carburetor also contributes to air pollution.

The pollutant products of the internal combustion engine--including carbon monoxide, sulfur dioxide, nitrogen oxides, hydrocarbon particles, gaseous hydrocarbons and various additives -- interact with sunlight to form *photochemical smog*. Photochemical smog is in *aerosol form*.

That is, it is in the form of tiny particles or droplets dispersed in the atmosphere. The environmental effects from photochemical smog are extensive. Visibility is greatly reduced. It causes irritation of eyes and nose. In concentrations it causes breathing difficulties and it has effects on a variety of vegetables, flowers, trees and other plants. All of the metro area counties have reason to be concerned about increasing concentrations of automotive air pollution.

Explosion of Service Needs

Several other major environmental effects of rapid growth can be grouped together as service needs of the expanding population. Large increases in the numbers of people in an area produce immediate demands for large increases in the supplies of clean drinkable water, more schools, garbage pickup and disposal service, road building and maintenance service, a sewerage disposable system, supplies of several types of energy for light, heat, cooking and appliances and any number of additional secondary services caused by these needs.

This explosion of service needs places great pressure on local government and area utility companies to provide the services as soon as possible. Provision of the needed services, in turn, requires extensive *additional development* such as the construction of additional water treatment plants; cutting, paving and maintaining new roads; building new schools; development of sanitary landfills; building garages for a fleet of garbage collection trucks and the construction of additional power facilities.

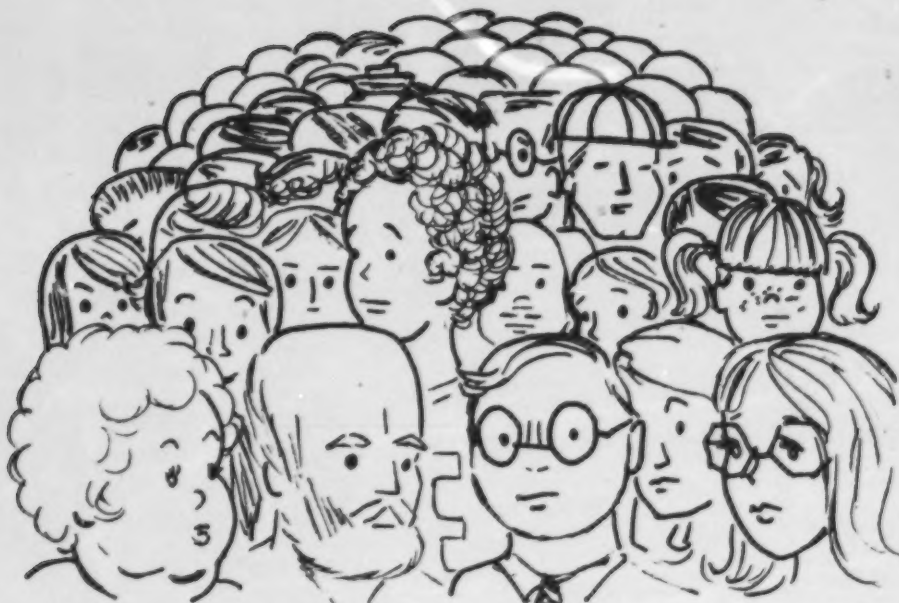
All of these added service facilities cost money, and costs of utilities and local government in the area usually goes up. The private utility firms and service companies when pressured to develop rapidly to meet rising needs, can usually pass increased costs to consumers. However, local governments, which have extensive responsibilities for the effects of growth on the community, may have difficulties in raising needed increased funds from taxes because of the limits placed on them by strong public opinion against tax increases and by state regulations which place some limits on local property taxing.

Just think about the tremendous effects that rapid population growth has had on Gwinnett County's government. As population doubled in the last ten years the county has had to greatly expand it's capabilities in police protection, fire protection, road maintenance, school programs, waste disposal and water treatment and supply. These are the more *obvious* demands on county government.

In addition, there are numerous less visible services that the county must provide, such as a system of keeping accurate and complete land title records, health services, trial courts for criminal and civil cases which arise in the county, and certificates of marriages and deaths, facilities and staff for county, state and national elections, and local regulation of traffic, land development, water systems and sanitation. To do all this county government must have additional staff, adequate office space and a vast amount of equipment ranging from graders to dump trucks to water testing equipment to typewriters and copying machines.

From this brief discussion of some of the effects of large scale population growth you can see that it causes a chain reaction of change in abiotic parts of the environment, such as soil, water and air, and on the people, plants and animals which make up our biotic surroundings. Some of these changes create imbalances in nature that are serious environmental problems which are ultimately hazardous to the physical and mental health of people living in the area.

But growth need not have disastrous effects if the people of the area are environmentally conscious and ecologically aware. Such awareness can lead to careful planning and regulation which seeks growth in harmony with nature rather than in costly conflict with it.



Time limits prevent us from analyzing each environmental problem in detail this quarter. In the next section, we will take a closer look at one of Gwinnett's persisting environmental problems and then examine the costs and payoff that public planning offers.

Class Activity

The poem on the next page "America, Do You Know The Sound of Weeping?" by Ken Jacobsen is about the quality of life in America. Read over the poem and answer the following questions.

1. What does the poem say about the way man treated his environment back in the times when Indian societies were dominant in America?
2. What does the poem say about development and man's treatment of the environment today?
3. Why would there be such a change in man's attitude toward his environment?
4. What does the poem reveal to us about the author's environmental values?

Write a short essay or poem which expresses your idea of a "quality life."

America, do you know the sound of weeping?

America,

you people who are the namers now,
call me America —

Up from the sun-whistling prairie,

Up from the unbridled riversong

Up from the mountain shadow
on the meadow-moss flower

Up from the ocean mist
on the shatter-shell sand

Up from the buffalo thunder

Up from the dove-wing storm

Up from the salmon spawn run

Up from the snowgeese flight

Up from the beaverdam brook

Up from the great moose hill

Up from the whippoorwill wood

Up from the pickerel pond

Up from the night heron swamp

Up from the eaglenest cliff

Up from the blueberry bees of Spring

Up from the milkweed moths of Summer

Up from the wildwine grapes of Fall

Up from the still-creature-sleep of Winter

Up from the dragonfly pool dozing in sun

Up from the cattail marsh crouching in fog

Up from the old-fir forest woven of
fern-shadow and fawn-light

Up from the day-fire desert woven of
windrifts and tawny mouse tracks

Up from the windwashed stone

Up from the wave worn shore

Up from the freshcome life

call me America —

You people who are the namers now,
who are the earthmovers now,

It is I who speak before your council now —

Do you know the sound of weeping?

Gone are the chanters among you,

Gone are the singers, gone are the dancers,

Gone are the people of earth and sky

Gone from the prairie are the Cheyenne
who chanted to the buffalo

Gone from the swampland are the Seminole
who chanted to the heron

Gone from the oceanside are the Kwakiutl
who sang to the salmon

Gone from the hills are the Cherokee

who sang to the snowgoose

Gone from the desert are the Hopi

who danced to the eagle,

Gone from the forest are the Mohawk

who danced to the moose

Gone are the sunchanters

Gone are the earth singers

Gone are the life dancers —

The names of these, your brothers of
earth and sky, they catch in your throats
as though they were strangers to you,

You people who are the namers now,

who are the earthmovers now,

who are the rumblers now,

Do you know the sound of weeping?

You take my creatures of the prairie
plowing my grass under,

You take my creatures of the swampland
choking my pools with rubble earth

You take my creatures of the oceanside
filling my waters with poison

You take my creatures of the hills
scouring my earth into dust

You take my creatures of the desert
drowning my tumbleweed ways

You take my creatures of the forest
tearing down my time-tall trees,

You take my land,

You take my sky,

You take my life,

You people who are the namers now,
who are the earthmovers now,

who are the rumblers now,

who are the idolmakers now,

I ask for chanting,

your idol worshipping is not a chant

I ask for singing,

your rumbling is not a song

I ask for dancing,

your earthmoving is not a dance

I did not ask for a name,

you named me America —

It is I who speak before your council now,
when even silence cannot bear silence

any longer —

Oh people, do you know the sound of weeping?

Class Activity

Viewpoints - "There Is Still A Growth Philosophy"

The following quotations are excerpts from comments made by several Gwinnett County leaders regarding continued growth. Think these over. Do you agree with their reasoning? What are your feelings about continued growth? What are the advantages and disadvantages?

"Many people would like to keep Gwinnett rural or to develop it as a bedroom community without industry, but that will only invite disaster in the near future. . . A community is like a living thing. It cannot remain stagnant. Once it stops growing it begins to die. People moving into the county will mean an increase in taxes, because they will have to be provided with additional services . . . When a business or industry comes in, it provides a large tax base without requiring all the services."

Len Gilbert, Gwinnett Chamber of Commerce
Executive Vice President
quoted in the Gwinnett Daily News,
November 27, 1975.

*** **

"The population is over 100,000 now, and they figure some 20 years from now it will be over 200,000 . . . They know that it's going to grow, so what they're trying to do in planning and zoning is direct where the growth is going . . . Stop growth? They actually could if they wanted to, but would probably decide not to do it for political reasons or economic reasons. (They could adopt a no-growth policy, because all they would have to do is adopt an ordinance saying that all houses and businesses would have to be hooked up to a sewer line. Since there are no sewer lines, that would be it!)

They're not going to do that. They are going to keep growing because so far there is still a growth philosophy . . . "

John V. Bryson, Cooperative Extension
Service
Gwinnett County Agent in interview,
Fall, 1975.

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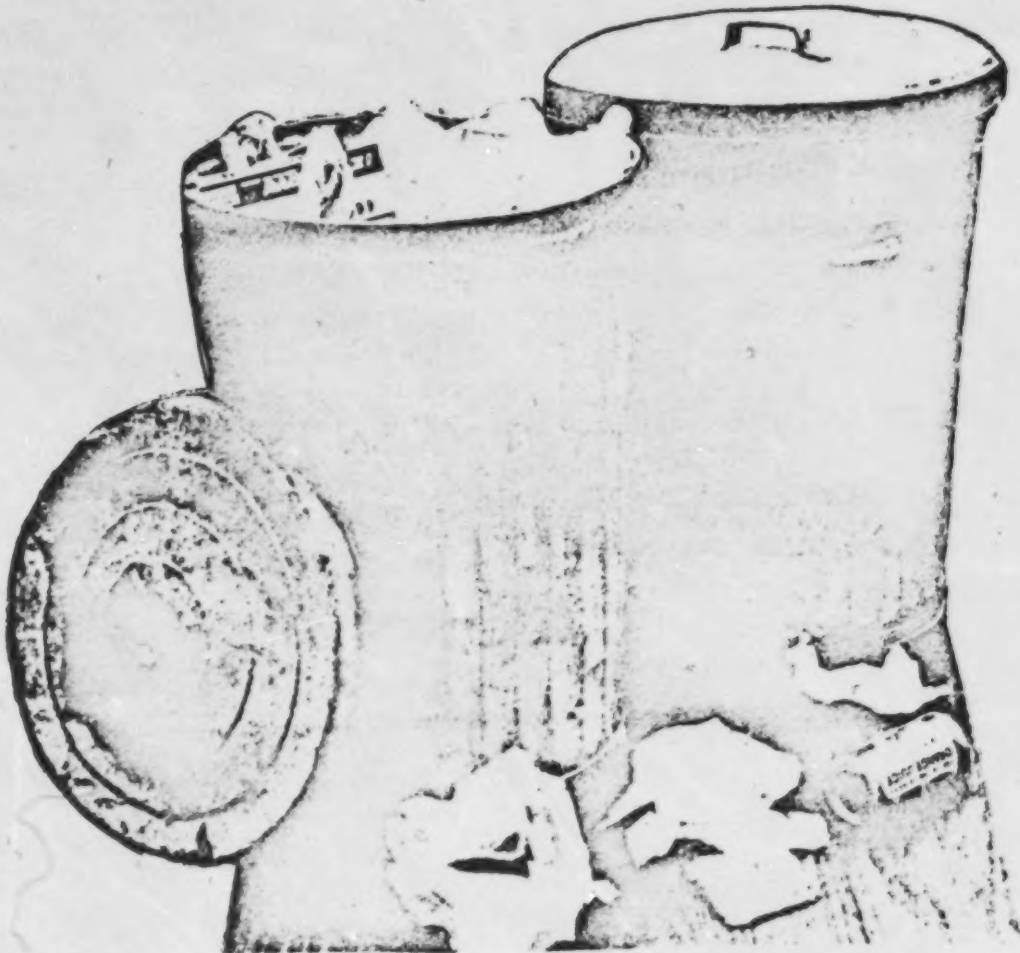
PART III

GETTING INTO A PROBLEM:

SOLID WASTE DISPOSAL

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TONS OF TRASH AND GARBAGE: CLOSEUP OF AN ENVIRONMENTAL PROBLEM



Take special notice of the trash that piles up daily in the waste baskets of your school. How many pounds of trash do you think are collected from all the waste baskets in Berkmar each day? How much additional waste material must be picked up or swept off the floors? Look around at the desks. How much paper waste is thrown into them?

Consider the garbage and packing material which must be collected from the cafeteria. How about papers, containers and junk that are dropped on the school grounds? Many pounds of solid waste are produced in and around the school each day.

How is all of this waste disposed of? The school's trash and garbage are loaded into a dumpster behind the school. Then where does it go? How do we get rid of this solid waste and all of the solid waste in the county?

Probably you have not thought of waste disposal as a major environmental issue, but it is one of the most persistent and costly problems in keeping our surroundings healthy. Inadequate or improper waste disposal contribute to water pollution, air pollution and other types of environmental decay.

In the same way that some students drop or throw their trash just any place around the school, some Gwinnett residents throw or dump garbage and trash along roadsides throughout the county. Great quantities of garbage are found in parks, along roads and on private land.

Disposing efficiently of solid waste materials is a serious problem in other counties and other states. For example, in a recent survey of municipal and county officials throughout the state of Oklahoma, the number one land pollution problem named was *roadside dumping*.

Collection and disposal of solid waste materials are especially serious needs in areas with rapidly growing population. As Gwinnett County has grown, so has the quantity of

solid waste from homes, stores, offices and factories. More people mean more food wastes (garbage) more trash -- discarded paper, metal cans, glass jars, grass clippings and tree trimmings, ashes, rags, discarded furniture and toys, more dead dogs and cats, more junk - discarded cars and other machinery and more waste pieces of metal, concrete and lumber from the demolition of old structures and from the construction of new ones.

The areas in and around cities in the United States are estimated to produce about 185 million tons of all types of solid waste material each year. This includes at least 30 million tons of paper, 4 million tons of plastics, 28 billion metal cans, 26 billion bottles and jars and 7 million automobiles.

Each person throws away an average of six to eight pounds of waste per day, and this per capita amount appears to be increasing. The U.S. Public Health Service estimates that the weight of waste produced by each person in this country will double within 20 years. The amount of garbage and trash is increasing far more rapidly than the population. Why?

Piles of Packaging and Heaps of Junk

Packaging creates major disposal problems. Foods, hardware, toys, clothing, cosmetics, household items and just about anything else you can purchase in a grocery or department store usually comes packaged in plastic film, cardboard containers, plastic bubble display containers, aluminum foil, plastic cartons, glass jars or metal tins. Much

packaging is either unnecessary or could be replaced by some type of wrapping that is lighter, and more compact. (For examples, note the cardboard and plastic boxes used to "dress up" the larger hamburgers at the national hamburger chain restaurants, or the plastic film and plastic trays used to display fruits and vegetables in most grocery stores.)

Some of the expensive packaging serves as advertising display in the stores. Other "convenience" packaging is meant to make it easier for the consumer to use the goods -- such as pressurized cans of everything from deodorant to cooking oil, and aluminum heating and cooking tins containing everything from popcorn to "three course dinners." This packaging revolution has been costly to the consumer. (In 1960 it was estimated that the average American family spent at least \$500 that year just for packaging.) Space-consuming packaging in the trash of households and businesses undoubtedly adds much more to the total costs of waste collection.

Food waste (garbage) rots or decomposes relatively quickly and is recycled into the soil. Metal cans rust and eventually decompose. Glass jars can be crushed and melted and quite readily recycled. Plastics, however, give us one of our biggest disposal headaches. They do not oxidize and decompose, and if they are burned, they often give off toxic fumes containing acids.

Large pieces of junked equipment made up of various metals, rubber and plastics, such as old cars, old farm equipment, refrigerators, freezers, mowers and bicycles, take a long time to decompose and meanwhile take up a lot of space. Such trash is very difficult to get rid of.

Dumping

For nearly two hundred years people in Georgia have disposed of much of their solid waste in common community dumps. All sorts of garbage, dead animals, trash and junk have been thrown into the gullies or pits that were used as dumping grounds. Open dumps were usually located away from populated areas because they tended to have foul odors and attracted flies, mosquitoes and rats.

Open dumps are now against the law in Georgia because of the health hazards and unsightly scenery they create. However, illegal dumping continues. Like many other counties in Georgia, Gwinnett is plagued with roadside dumping.

Garbage and trash that are dumped on the surface of the land not only mar the scenery but pollute in several ways. Insects breed in food and other biotic wastes. Rats are also attracted to it as a feeding place. A general health hazard is created by the disease-carrying rats and insects. Dumping also pollutes the water of an area. Rain falling on garbage runs off into nearby streams and ponds, or it soaks through the soil into ground water. Solid waste can also become an air polluter, for as it decays it gives off foul odors.

A New Way of Thinking

Faced with increasing quantities of garbage and trash, communities in Georgia and throughout the nation are beginning to think seriously about the alternatives for effective and productive waste disposal. To "get rid" of garbage, junk or other waste matter we have usually thrown it out of sight. Dumping has long seemed to be the cheapest

and easiest method of getting bothersome and unsanitary waste out of the way. The available surface environment for dumping in any community gradually runs out. What was not recognized in the "old way" of thinking was that the problem is not one of getting rid of waste but a problem of recycling limited resources. What is required is an effective and practical method of returning abiotic and biotic contents to the ecosystem.

The necessity of recycling garbage and trash in a healthful and efficient manner has been reflected in public policies of state and local governments only in recent years. But this awareness is still not widespread among individual citizens. Many people care only about getting waste materials out of their own homes, yards or businesses. Few worry about the long-range effects that unsanitary and partially effective disposal will have on health, soil, water and supplies of resources in the future.

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Alternatives to the Dump

Sanitary Landfills

Incineration

Composting

Burying

The *sanitary landfill* is a method of burying refuse in soil which uses engineering techniques to put the waste in the smallest possible

area, and cover it with a layer of earth. A bulldozer is used to compact each truckload after it is carried in by garbage trucks. Then a dragline operator covers it with earth. A bulldozer then compresses and smoothes the area to make room for another load of waste. This is considered the least expensive method to dispose of the greatest variety of solid waste material.

In a well run sanitary landfill it is important that the waste be covered frequently. The garbage and trash are buried before they can be blown around, catch fire or attract insects and rats. Once in the ground the waste is gradually decomposed by bacteria deep in the soil. If the waste material is tightly compacted, odors will be eliminated and later settling of the ground will be avoided. Compacting saves space and provides solid fill for future use of the site.

One problem in landfills is that they do not readily accommodate old tires, junked automobiles and other large or difficult-to-recycle junk. Most of these junk pieces could be salvaged for reuse by reprocessing, but thus far the cost of reprocessing has been greater than the cost of fresh ore, rubber, etc. and it has not been widely done.

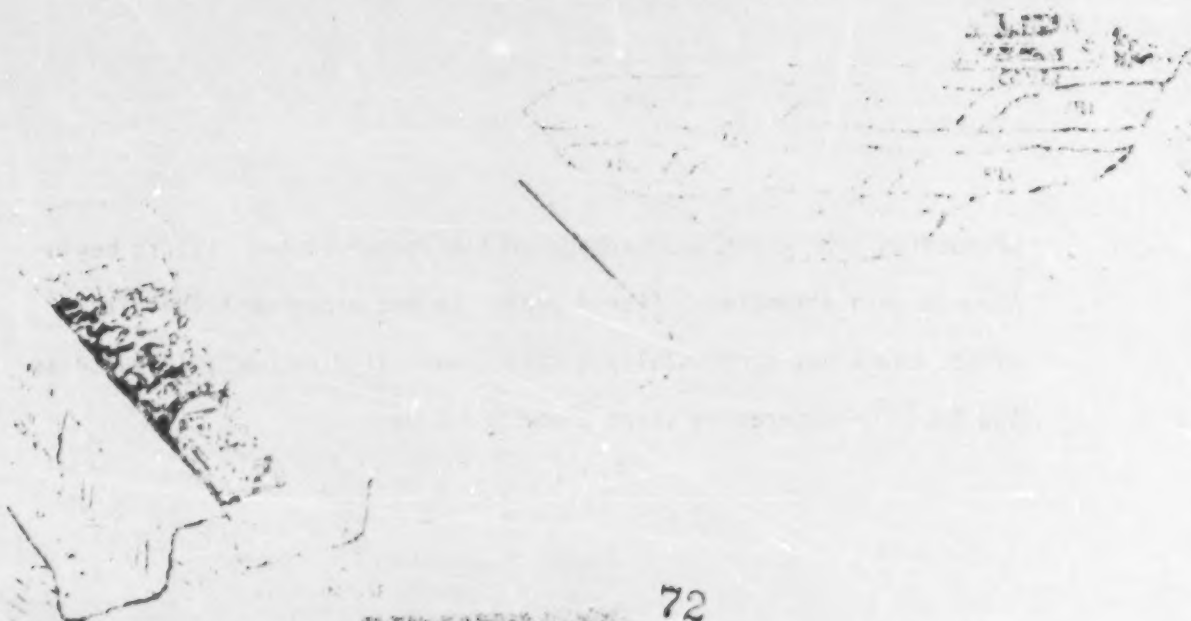
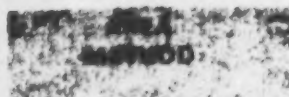
One method of landfilling is known as the *area method*. In this method gravel pits, abandoned quarries, sand pits, old strip mines and other gullies or hollow wasted land are gradually filled in with waste and dirt. When the site is all filled in and correctly covered with a two or three-foot layer of dirt then the land can be used for other purposes such as recreation or praks.

Another landfill technique is the *trench method*. This method utilizes level dry land in which trenches are excavated. Each trench is usually dug about eight feet deep, two tractor widths wide and long enough to accomodate one day's refuse. Garbage trucks dump their loads into the trench. The dirt which was collected from digging the trench is used as a cover for the waste material.

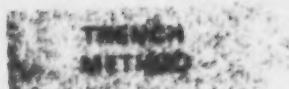
Good landfill sites are difficult to find. Generally a sanitary landfill should be:

- Accessible to the community so that trucks and cars with waste matter to dump can reach it in a short time by good roads.
- On land with a deep soil surface for the necessary excavating and bulldozing.
- On sandy loam soil or other low-permeable soil. Rocky soil or gumbo clay or pure sand are not appropriate.
- Large enough to accomodate the waste of the district. It is estimated that at least one acre of waste 12-feet-deep will be produced by 10,000 people per year.
- Located in an area where the ground water will not be contaminated or where it could possibly drain into the public water supply.
- Well attended with the waste covered daily or more often if needed.

SANITARY LANDFILLS



NEXT TRENCH



72

Burning

Incineration or burning has long been used to reduce solid waste. However, open burning pollutes the air and leaves piles of noncombustible materials which must be disposed of. Most backyard, apartment house and office incinerators pour ashes, smoke and soot into the air, so they have been outlawed by new air pollution standards.

Well designed incinerators can reduce large quantities of waste to ashes that are then easily recycled. Incinerator plants can reduce the amount of smoke released by proper filtration and by separating out the non-combustible and poorly combustible materials before the burning process. Also, the heat produced by burning can be used to produce steam for heating or for generating electrical power. Properly designed and located incinerator plants tend to be expensive, but there is a potential economic payoff in that the ashes produced can be made into bricks and concrete and the heat energy produced may be saleable.

European communities for many years have utilized the heat generated from incineration of garbage and trash. Probably because heating fuels have been much more expensive in Europe, the thermal energy produced by burning garbage has not been wasted. The potential for energy production from trash and garbage in the United States is just beginning to gain attention. (For example, in one experiment the city of St. Louis has successfully utilized separated combustible waste as the fuel for generating steam power and heat.)

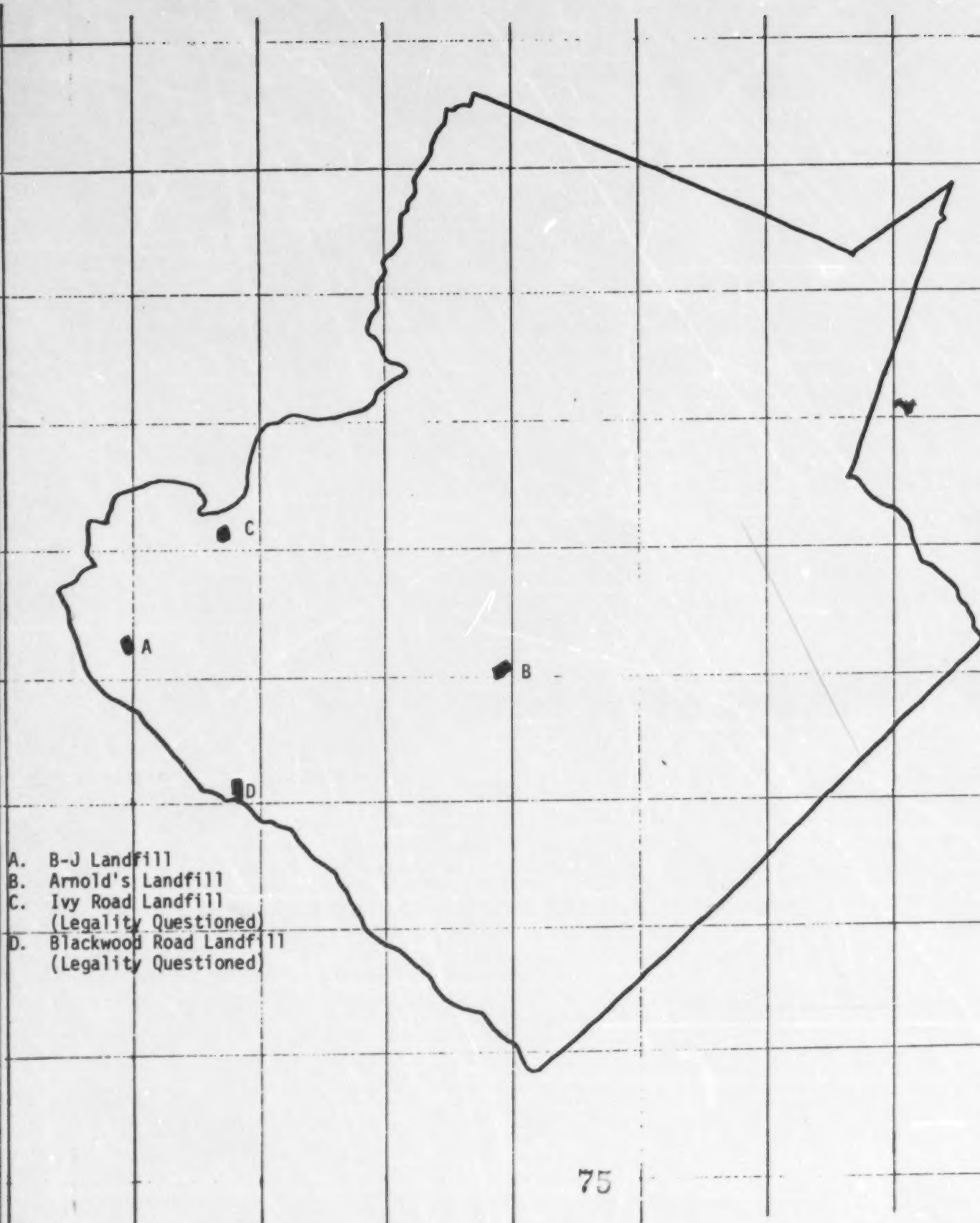
Decomposing Above Ground

Composting is another technique for recycling waste. In this process only the garbage consisting of plant and animal (organic) waste materials is trucked to plants to be decayed aerobically (whereby oxygen and a controlled growth of decomposing microbes break down the garbage into a rich organic material). The garbage thus loses its odors and is turned into a useful soil conditioner. Gardeners have for a long time utilized this natural method of recycling food waste into the soil.

The process is expensive because it requires pure organic garbage. Since most households cannot be counted on to carefully separate garbage from other waste, a careful screening and separation is usually required at the composting plant. Also, if the composting plant is not properly designed it will produce unpleasant odors. Therefore, there are objections to locating it close to the garbage source. Trucking the garbage any distance then adds more to the cost.

Disposing of Wastes - Legally and Illegally

At a local landfill in an hour's time you can see trucks unloading all sorts of waste material such as huge tree stumps, an old rusted



- A. B-J Landfill
- B. Arnold's Landfill
- C. Ivy Road Landfill
(Legality Questioned)
- D. Blackwood Road Landfill
(Legality Questioned)

tricycle, numerous cans and great quantities of food scraps from restaurants, dead farm animals, a battered auto fender, old wire and metal parts from a small industry, odds and ends of broken furniture, piles of paper waste from a drive-in restaurant and great loads of papers, garbage, bottles and cans from residential neighborhoods.

It is estimated that at the two sanitary landfills franchised by the county, at least 575 tons of waste material are received daily.

However, you need not travel to a landfill to see dumped garbage and trash. Unfortunately it is visible here and there around the county along back roads and on public and private lands. This illegally dumped trash and food waste range from large quantities packed in big plastic bags to small amounts in the form of coke and beer cans, chicken boxes, and brown paper sacks of household garbage.

Although individuals may be fined for roadside dumping, it is difficult for county police or sheriff's deputies to patrol every back road and hidden thoroughfare to catch the dumper in the act. (One technique used is to investigate the garbage for discarded letters, bills and other mail to determine the name and address of the person or business dumping illegally.) Backyard burning of trash and garbage is also illegal in the county, but some people still do it -- polluting the air and taking a chance on being fined.

Gwinnett's waste collection and disposal program is publicly planned and privately operated. In unincorporated areas of the county, garbage and other solid waste can be picked up from homes or businesses by private collection companies. The county is now divided into five garbage collection districts, and the collection trucks of a designated company serve households and businesses of the district which subscribe to the service. These collection companies are franchised by the county commissioners to collect solid waste for a monthly fee (currently about \$6.00 a month) and dispose of it at sanitary landfills. Most cities in the county also have a franchised system of garbage collection by private firms.

A household or business firm may decide not to pay for such pickup service and instead may transport its own trash and garbage to one of the landfills in the county. In that case they will pay a fee, dependent on the size of the load, to unload waste at the landfill.

Currently Gwinnett County has two sanitary landfills which are privately owned and privately run but which have contracts with the county. These are the Arnold Landfill and the B.J. Landfill (See map on next page.) Within the county there are also two additional privately run landfills which meet state standards for receiving and covering some types of trash but which do not actually meet the standards of *sanitary* landfills. According to some county officials these landfills have not adhered to legal restrictions on the waste they may receive. It is reported that they illegally accept garbage and animal waste and some industrial wastes which pollute soil and water in the area and

may jeopardize future residential development. Reportedly these landfills are operating in violation of state law and county ordinances, and the county government is in the process of taking legal action against them.

There are no county owned or county operated landfills in Gwinnett County where homeowners, industries and commercial firms may bring their trash and garbage without paying a fee. Extensive illegal roadside dumping, trash burning and the existence of illegal nonsanitary landfills have aroused some citizens to question the overall effectiveness of the current solid waste disposal program for the county, especially as the county continues to grow and develop.

Both public officials and concerned citizens have pointed out some of the difficulties in the current waste disposal system:

1. Location and Numbers of Landfills. A glance at the map of landfills on page 73 shows us that the two legally operated sanitary landfills are not easily accessible from all parts of the county. It has been suggested by several observers that the county needs additional franchised landfills which meet state standards for disposing of all types of household and industrial solid wastes. If new landfills are located in populous sections of the county which are not now served by readily accessible, legal landfills, the incentive for illegal dumping and burning may be reduced.

2. Costs to Individuals. Unlike many other Georgia counties Gwinnett County does not have a county operated landfill to which residents may transport their garbage and trash and dump it without being charged. Such a landfill would be supported by county tax funds and federal revenue-sharing funds and operated by county engineers. Some observers suggest that individuals and businesses dump or burn their garbage illegally because they are unwilling to pay by-the-load to place it in a landfill.

3. A County-Supported Collection System. Others suggest that the garbage collection program in the county should not be optional but should be provided for all residents in the unincorporated areas of the county. This might be done by means of house-to-house and business-to-business collection by trucks. Or it might be done by installing dumpsters in neighborhoods of sub-divisions and along roadways of more rural sections. Then collection trucks would empty the dumpsters at needed intervals.

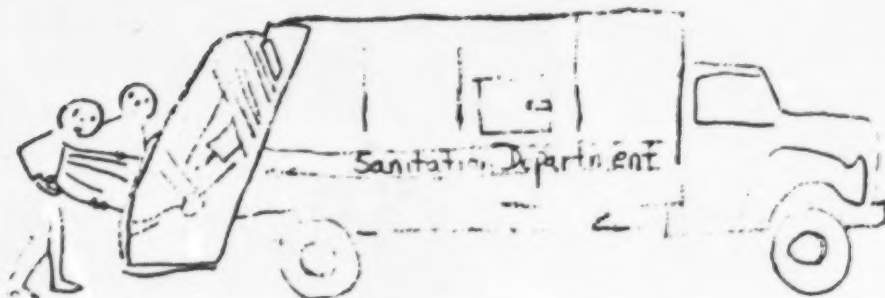
Such a county-wide system of collecting everyone's trash and garbage, would require an increase in tax revenues to carry it out, whether it was done by the county or contracted out to private collection firms. Government funded collection programs can be costly because the service is provided for everyone. (In the United States it is estimated that about 75% of waste disposal costs are spent for collection.)

State Law Promotes Regional and County Action

The Solid Waste Management Act passed by the Georgia state legislature in 1972 promotes long-range systematic planning in sanitary solid-waste disposal. Every county and every municipality is required to develop a sanitary solid waste disposal plan. The plan then is to be submitted to the Environmental Protection Division of the state government.

The Atlanta Regional Commission, is a planning agency which represents and serves the seven counties in the Atlanta metro area. ARC studied waste disposal conditions and needs in the area and worked out a broad plan for the seven counties to improve their services. Among the proposal for improvement, it was recommended that Gwinnett County provide for an additional countywide sanitary landfill. (The area of the Atlanta Regional Commission is shown on the map on page 84.)

The Gwinnett County Board of Commissioners, which is the main legislative and administrative body of the county's government, is now (Spring, 1976) reviewing the county's solid waste ordinance. They are attempting to comply with the state law and meet state standards in drawing up new guidelines for solid waste control. Gwinnett County does not have a sanitation department or sanitation engineer. However, the county's Department of Planning, Zoning and Inspection will advise the commissioners on proposals for improvement.



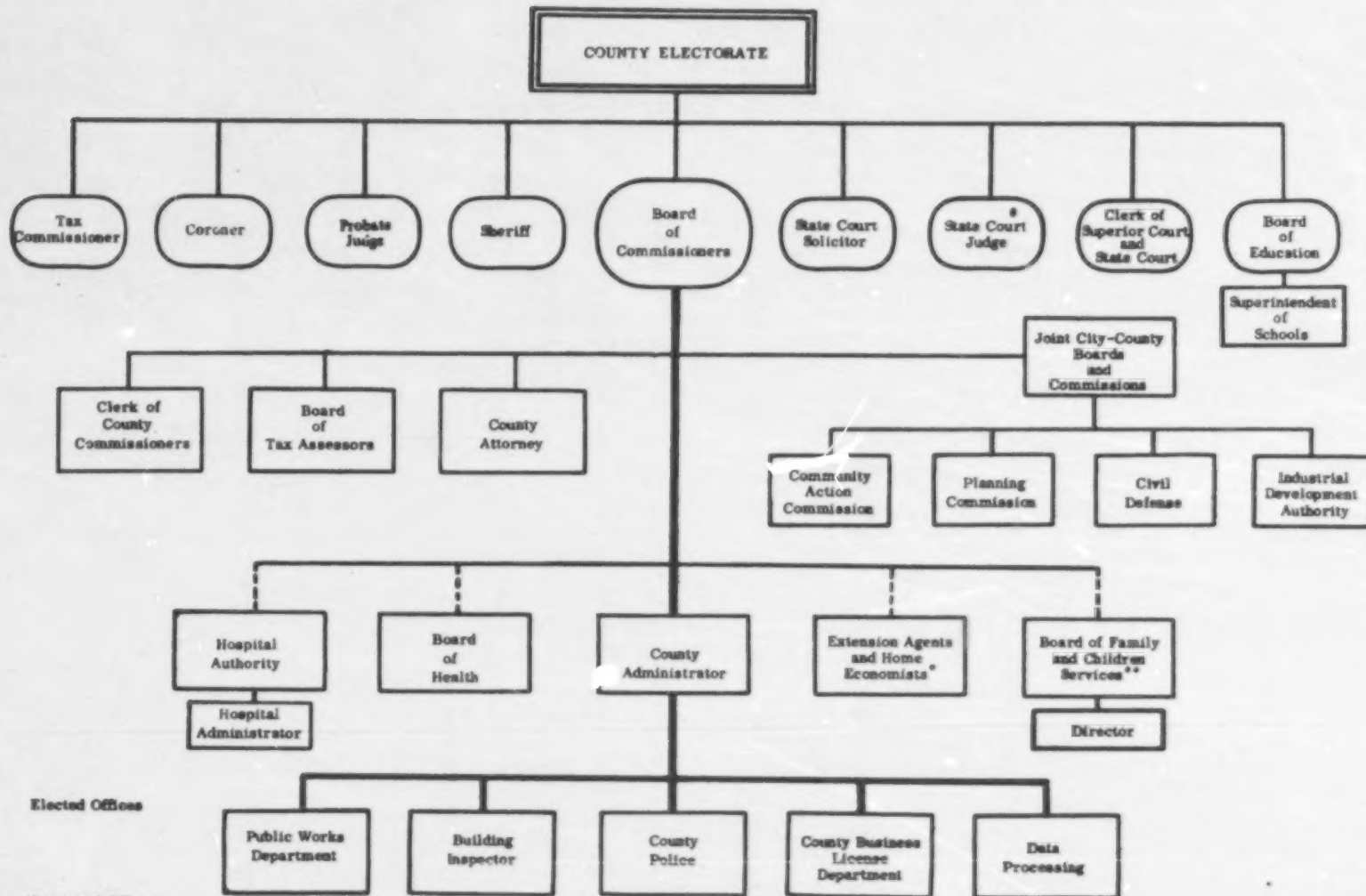
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Effective garbage and trash disposal is a serious issue currently before Gwinnett's county government. Local residents and business people can have some voice in the commissioners' proposals for a new ordinance by letting the commissioners know their views.

Does the commissioner for your section of the county know about the conditions of garbage and trash collection in your neighborhood? Have people in your area expressed their views on service, costs, sanitation and likely effects on the county's land and people in the future? The chart on the next page outlines a typical government found in the more populous counties in Georgia. Gwinnett County's government is not structured exactly like this, but it is very similar. Environmental policy in the county is mainly decided by the Board of Commissioners which is made up of five elected officials. Appointed officials in the Water and Sewerage Department, the Planning, Zoning and Inspection Department and the Engineering Department play important roles in conducting investigations and advising the commissioners. Enforcement of the county's environmental ordinances (laws) is carried out by the Sheriff's Department and County Police.

Do you know what people hold these important elected and appointive offices in your county? Do you know where their offices are located? Look over the chart. What other county officials may have some part in protecting the quality of the Gwinnett environment.

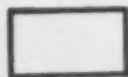
LARGE COUNTY GOVERNMENT



LEGEND



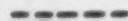
Elected Offices



Appointed Offices



Indicates appointive and control power.



Indicates appointive power. Powers of control generally limited.

*—Appointed by Board of Commissioners and University of Georgia Cooperative Extension Service.

**—Appointed by State Commissioner of Human Resources from nominees submitted by Board of Commissioners.

Some Comments on Municipal and County Solid Waste Disposal

"We (Snellville) were the first in the county to franchise. We franchised one man exclusively and we put him under a bond. He pays us (the city) 2% He handles everything in Snellville and the commercial(waste). The county then took the approach that we did and is using franchises all over the county. The state has closed several of the landfills, especially the city owned, if they don't cover with so much dirt within a certain amount of time. That's another reason we made a wise move getting out the garbage business."

Emmett Clower, Mayor of Snellville

*** *** *** *** ***

"There are very few problems considering that garbage disposal is a tremendous undertaking. The facilities now on garbage are adequate and I would not recommend any change. Preferably keep government out of the garbage business. It's done much more efficiently by private enterprise than the government is able to do it."

James Pack, President, Gwinnett Federal Savings
and Loan Association, Lawrenceville

*** *** *** *** ***

"One serious problem is that a lot of people do not make use of the garbage pickup service. They would rather dump theirs somewhere out on a rural road or even on a not-so-rural road. There are some places within a mile of here where there is garbage dumped along the road and out in the woods on other peoples' property. There is undoubtedly a growing rat population. I would imagine that the rat population is growing by leaps and bounds. . . ."

John Bryson, Gwinnett County Extension Agent

*** *** *** *** ***

"In 1972 a vote was held, a straw ballot along with the general election to ask the citizens of Gwinnett County if they wanted the Board of Commissioners to get involved in residential garbage collection. The vote was overwhelmingly yes, and we did in early 1973. We did it by franchising the collection areas to private industry. . . . We imposed a set of standards, franchised them, and we have been real pleased with it. For one thing, we have some neighboring counties which spend a world of tax dollars -- besides what they are collecting from the citizens for solid waste. We allocate some time and energy in planning, but we have left it in private enterprise under our direction. We believe that is the way to do it."

Wayne Shackelford, Administrative Assistant to
the Gwinnett Board of Commissioners

Think About This

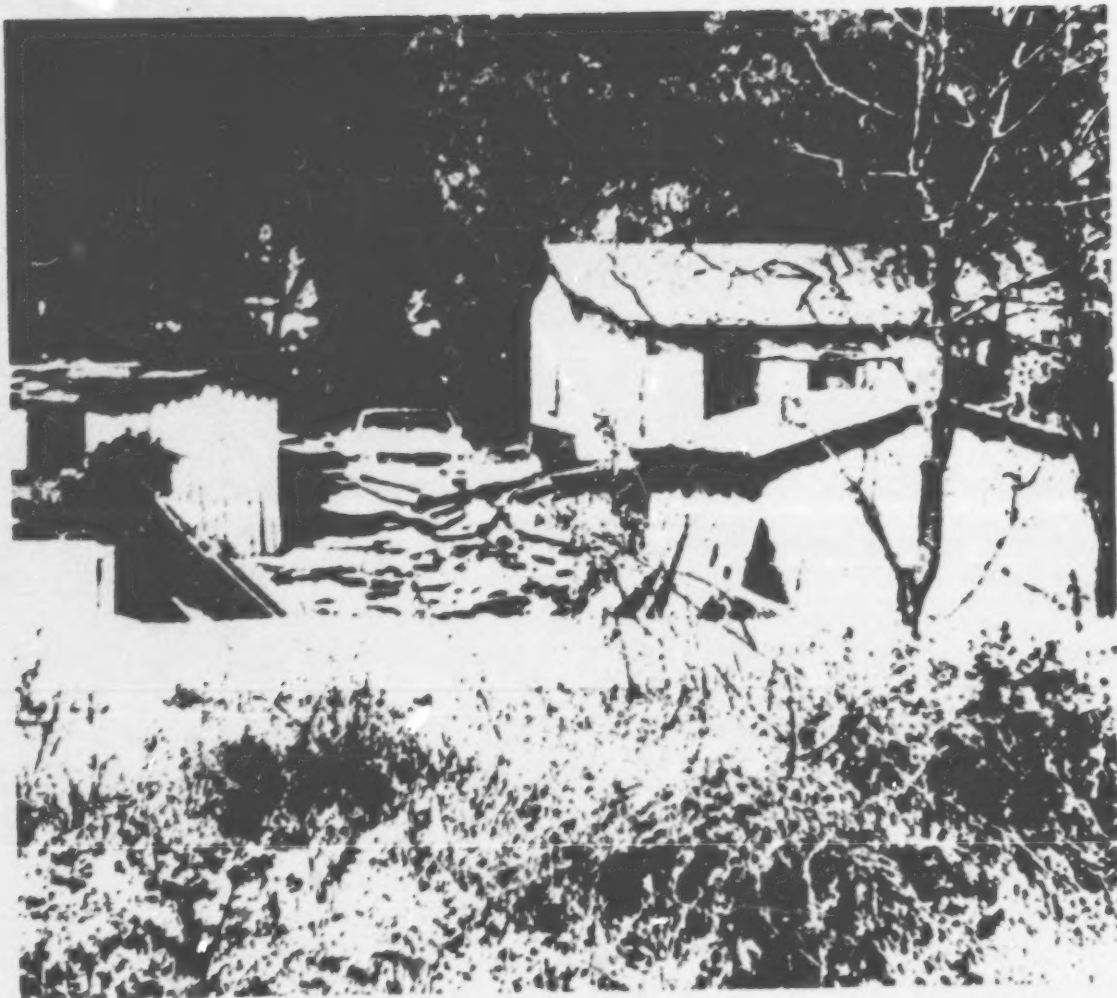
1. Distinguish between garbage, trash and junk. Which materials give us our greatest recycling problems? Why?
2. Check with janitors and school officials to determine how many times Berkmar's dumpster is emptied in a week. How much waste does the full dumpster hold? What is the average waste per student per week?
3. Prepare a bulletin board on wasteful packaging. Pin up samples of cartons which serve little purpose than display and which might be done away with or replaced by a wrapper than is lighter and can be disposed of more easily. (e.g., hamburger styrofoam boxes, plastic bubble see-through containers for cosmetic items or hardware, etc.)
4. Compare the advantages and disadvantages of solid waste disposal by 1) incineration, 2) sanitary landfills and 3) composting.
5. Evaluate Gwinnett County's solid waste collection and disposal system. (This is the collection and disposal system operating in the areas outside of incorporated municipalities.) A small student committee can learn additional information from the office of the Administrative Assistant to the County Commissioners and the County Planning and Zoning Office. Look over the three suggestions for improvement. Do you think any one of these changes would greatly improve waste disposal in the county?

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PART IV

GETTING INTO THE ACT:

A LAND USE DECISION



LAND ABUSE - A LOSS OF SPACE AND BEAUTY IN ANY COMMUNITY

PLANNING FOR PREVENTION

"The utter disregard for the integrity of the land and its relationship to man inflicts special penalties on the young and the unborn. The uses of land resources throughout America must be brought under a working philosophy of trust, buttressed by fair, democratically enforced laws and farsighted planning. This same philosophy of trust inspired the conservationists' partial victory early in the century when the federal government secured and protected large portions of public lands and forest. The demands on our national resources are now much greater and much more critical. And time is not as plentiful for the exercise of indifference."

Ralph Nadar, introduction to Politics of Land by Robert C. Fellmeth, (New York: Grossman Publishers, 1973)

We have found that rapid development in Gwinnett County has brought on serious environmental problems -- land erosion, heavy soil run-off and siltation; flooding, backed-up septic tanks, water system failure, traffic-choked highways, overcrowded schools, increasing photochemical smog, garbage dumping problems and a decreasing availability of the quiet, natural green surroundings which attracted people here in the first place.

Throughout the past six to seven years local government and community citizen groups have made some good progress in remedying these problems. Your county and municipal governments with assistance from regional agencies of the state and federal governments have moved forward quickly to alleviate the environmental damage which resulted from unregulated and unplanned growth some years ago. Now the people of Gwinnett are confronted with decisions about how to avoid environmental damage in the future.

How can a large suburban county avoid the environmental decline which tends to follow extensive development? How can Gwinnett continue to grow and not find itself continually suffering from problems with its water, soil, air, waste matter and vegetation? How can we prevent a general decline in the beauty and quality of the local surroundings?

The main requirement of a prevention program is an increased ecological awareness throughout the community. People must be aware that they are part of a natural system, and that what they do to change the land, soil, animal life, air, water or vegetation will affect the whole system eventually affecting the people in it.

Consider, for example, that it takes about 600 years for six inches of topsoil to build up, and yet people can destroy that soil by erosion or pollution in less than one year.

An individual who unwittingly destroys the root system of vegetation on his land by bulldozing away all the trees and plants, is surprised to find that his land is soon badly eroded, the top soil washed away and nearby streams or ponds have become flood-prone from heavy siltation.

On the other hand, when there is an ecological awareness, a developer who has been offered a large tract of land at a good price will check on the qualities of the land and soil through the services of the local Soil Conservation Office of the U.S. Department of Agriculture. Learning that the land is in a flood plain (and can be expected to be marshy or flooded periodically) can help the developer to avoid the headaches and costs of flooding and build elsewhere. The flood plain, which plays an important part in replenishing the water table, in turn, remains undisturbed.



Environmental problems often extend beyond county lines, and solving them requires multi-county cooperation. In 1960 the state legislature authorized local governments to form commissions which would organize cooperative planning by the cities and counties in an area, helping them to jointly solve sanitation, transportation and various other problems.

There are now eighteen Area Planning and Development Commissions in Georgia. Each has a professional staff which investigates and analyzes area problems and suggests broad plans for cooperative improvement. Gwinnett County is a member of the Atlanta Regional Commission.

Although widespread ecological awareness is important to protecting the environment we live in, by itself it is not enough. To assure that protective and preventative measures will be enforced, ecological awareness must be translated into citizen action and public policies and regulations.

One Approach

What factors should be taken into consideration when planning how to use land use for the future?

One set of recommendations comes from the Task Force of Land Use and Urban Growth. This was a national study group set up in 1972 by the President's Citizens' Advisory Committee on Environmental Quality. They were concerned that land use and planning questions were being neglected in the rush to solve the more obvious problems of air and water pollution. Pointing to the mushrooming population growth all around large cities, the task force stressed land use as an important factor in all other environmental problems.

The Task Force on Land Use and Urban Growth studied the research and information on land use reviewed existing regulatory laws and carried out some field studies of its own. In its final report,* the task force presented a series of recommendations for planning for a quality environment by regulating future development. Ten major points are summarized below:

* The Use of Land: A Citizen's Policy Guide to Urban Growth, edited BY William K. Reilly. (New York: Thomas Y. Crowell Company, 1973).

1. Some lands should be kept free of development:
 - a) Areas of critical environmental concern which have important cultural or natural characteristics -- such as beaches and dunes, the floodplains of rivers, lakes and streams, steep slopes, rare or valuable ecosystems, valuable forests and historic districts.
 - b) Areas needed as public "open spaces" for preservation between expanding urban areas and which could help control the pattern and size of future development.
 - c) Land that would serve as a buffer zone or separation between expanding urban areas and which could help control the pattern and size of future development.
 - d) Farmland which is unique or highly productive.
2. Governments at every level should map out future plans and buy land to assure that the amount of parkland increases with the population. It is suggested that local governments also require developers to contribute adequate land for parks and recreation to satisfy the needs of the numbers of residents in their developments.
3. Since government cannot purchase all of the land which must be preserved, it should pass protective legislation for privately owned marshes, dunes, rare ecosystems, forests and historic sites.
4. Governments must put into effect forceful regulations which support their land-use plans. This is difficult to do -- especially through local governments because the profit expectations of land speculators are widely accepted at the

local level and because such speculators can more readily influence the decisions of small governing boards. Therefore, the Task force recommends that state governments can more firmly protect land use by legislative policies which leave the administration of the law to local government.

5. A modification of the idea of acceptable profit- incentives in land development should be sought through informed public opinion and the policy support of government regulation. The development of lands that are hazardous to the residents, overdevelopment, and damage to the environment should eventually become unacceptable to people. Says the report, "Surely it should be possible to develop a national consensus that profits from the residential development of a floodway are the moral equivalent of profits from selling tainted meat."
6. Local government planning and zoning decisions should take into consideration the difficulty and expense of providing such public services as sewers and a water system to an area. And, in turn, it is recommended that local governments locate sewer lines only in areas where they wish to encourage growth and development.
7. Incentives such as favorable tax treatment can also be effective. However, these should be utilized only if the incentive for limited or non-development is applied to appropriate locations and has some permanence. Also non-economic

incentives can be initiated by private individuals, especially where local government fails. (For example, several land-owners may enter into a trust agreement to insure mutual restrictions on the development of their lands. Or groups of citizens may purchase land which they agree will be kept in its natural state or used as a common park.)

8. Plan and zone with provisions for clustering (or "planned unit development") which has a required parkland or open area. (For example, if an ordinance requires one-acre of land per housing unit, a large planned-unit developer might be allowed to build on 100 half-acre lots and then provide 50 acres of parkland or open area in the development. This contains an incentive for the developer since he is allowed to build and sell more homes in the same area.)
9. Protect public open lands or parkland from diversion to public construction projects such as highways, county offices or maintenance facilities. If the location of such public land makes it imperative to use it for building, it is urged that the land be replaced by comparable recreation area or parkland.
10. One of the most effective ways to regulate development is by careful government study of the proposed development to determine what kind of impact it will have on the environment. "The great benefits of the process are its focus on proposed

development, its consideration of feasible alternatives, and its replacement of the 'minimum standards' concept of seeking among feasible alternatives what is best for the public interest." Each step of the regulation process should take place at advertised meetings which are open to the public. Any government officials who could receive financial benefits from a planning or zoning decision should disqualify himself from voting on that decision.

The Task Force made a number of other related suggestions for ways to help raise the standard of public and private conduct in regard to the environment. Throughout the report they stress the need for a fundamental change in the values and attitudes of the people of a community -- so that land will be considered "a resource to be wisely used, rather than as an opportunity for speculation" and so that "insensitive treatment of the land will come to be regarded, not as a sort of marginal irregularity, but as an unthinkable misuse of a valued resource."

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CLASS ACTIVITY

FIELD STUDY OF AN ENVIRONMENTALLY PLANNED BUSINESS FIRM

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The international headquarters of the Simmons Corporation is a good example of how environmental awareness can change ways of doing things and benefit both man and nature. The building is located in Gwinnett County, near Norcross, overlooking the Chattahoochee River.

When you look over the Simmons site you will see a business structure which was planned and built to harmonize with its natural surroundings. It was built on pilings so it would interfere with natural plant life and water drainage as little as possible. Developers minimized bulldozing and paving in an effort not to disturb the land surface.

When you visit the Simmons Corporation, compare it to other more typical business construction. Notice the parking facilities. Notice the building design. Notice the sights and sounds of the general surroundings, and check with our guides on costs. Does this building cost much more, per square foot of construction, than ordinary business buildings which disrupt or damage our natural surroundings?

Planning and Zoning in Gwinnett

Georgia counties were empowered by the Georgia General Planning Enabling Act, passed by the state legislature in 1957, to develop land use plans to promote "health and safety," lessen "congestion in the streets," avoid "undue concentrations of population and urban sprawl," and to provide for the general welfare of county residents in numerous other ways.

Under this grant of power the Gwinnett County Board of Commissioners passed *The Zoning Resolution of Gwinnett County*. The current land use plan was drawn up in 1970 by professional planners for the County Planning Commission. This commission is an appointed board which represents both incorporated and unincorporated areas of the county. A public meeting was then held where the plan was presented to Gwinnett citizens and objections and recommendations were heard.

Finally the plan was presented to the Board of Commissioners who made some changes and then adopted it. *The Zoning Resolution of Gwinnett County* has been in effect since May 24, 1970. Several amendments since then have made changes in the district land use restrictions. Copies of the amended ordinance are available in the county Planning, Zoning and Inspection Department's office in Lawrenceville.

The plan sets down a use-category for all land in the county. The zoning district of each piece of land is shown on detailed maps of each area of the county. For example, look at the map on the next page. Do you recognize the area? It shows the land near the intersection of Highway 29 and Pleasant Hill Road which is the immediate vicinity of Berkmar High School.

On the following pages you will find a summary of the zoning codes and districts and a brief description of the development which is generally allowed in each district. (Full information is contained in *The Zoning Resolution of Gwinnett County* which your teacher has available for your use.)

On the zoning map you can see that the land on which Berkmar is located is zoned O-1. If you look this up in the district code you will find that it is an *office-institutional zone* appropriate for schools.

Around the school there are numerous C-2 districts, some C-1, RM and a large R-75 district. Look up each of the codes and then look over the thirteen types of land districts.

Zoning Procedures

To attempt to have the zoning for any particular piece of land changed ("rezoned"), the person or corporation desiring the change must present a request to the Board of Commissioners. A time for a public hearing before the Zoning Board of Appeals is then set. The public meeting is advertised for two weeks during which time a sign is posted on the property indicating that rezoning has been requested.

When the public hearing is held before the Zoning Board of Appeals, all interested individuals or groups are allowed to speak for or against the proposal to change the land use restrictions on that property. (The request for rezoning may seek greater restrictions or less restrictions on the ways in which the land may be used.) People speaking out at the hearing may offer various scientific, economic

R-75

DICK'S COURT

JOHN'S

STREET

EAST JOHN'S

C-1

CARTER

DRIVE

C-2

RM

O-1

C-2

60' STREET

C-2

C-2

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ZONING DISTRICTS -- GWINNETT COUNTY

The use of county land has been restricted by zoning ordinances. A summary of the zones and the general land use limitation is shown below. For more detailed and specific information on the zoning districts look in *The Zoning Resolution of Gwinnett County, Georgia* and its amendments issued by the Board of Commissioners of Gwinnett County.

- RA200. Agriculture - Residence District - This district is comprised of land having a predominantly rural character. It is the intent of the regulations of this zoning district to discourage the subdivision of land for urban development requiring such urban services as a public water supply, sanitary sewers, fire protection and the like.
- R100. One-Family Residence District - This zoning district is intended primarily for one-family residences except mobile homes and modular homes and related uses. School and churches may also be included.
- R75. One-Family Residence District - This zoning district is intended primarily for moderate-cost one-family residences and related uses on land served by a central sewerage system. The development of lots in this district is permitted with septic tanks, provided lot sizes correspond to the area in square feet in the R100 District. All septic tank installations are subject to the approval of the Gwinnett County Health Department.
- RL. Lakeside Residence District - The purpose of the RL. Lakeside Residence District, which borders on Lake Lanier, is to permit recreation cottages on medium-sized lots, and, as special exceptions, subject to the approval of the Zoning Board of Appeals after a public hearing, individual mobile homes and modular homes and water-related recreation areas and facilities.
- RM Multi-Family Residence District - This zoning district is intended primarily for two-family and multi-family dwellings. The RM Zoning Districts are located where public water supply and sewerage facilities are available or can be obtained and where there is convenient access to collector streets, major streets or state or interstate highways. The multi-family dwellings may be duplexes, row houses, town houses or apartments.

- MH. Mobile Home District - This zoning district is intended exclusively for the placement of mobile homes in an environment that will provide pleasant and otherwise satisfactory living conditions and, at the same time, will not produce adverse effects upon neighboring properties. Within this district are permitted mobile home parks in which lots are leased.
- HS. Hospital Service District - The purpose of the HS Hospital Service District is to provide a location for a hospital and related facilities that serve the hospital or benefit from a location in close proximity to it.
- C1. Neighborhood Business District - The C1 Neighborhood Business District provides a location for convenience goods and services for people in near-by residential neighborhoods. Within the C1. Neighborhood Business District the following uses are permitted: any retail, financial or personal business or service providing convenience goods and services to near-by residential areas except drive-in eating places and places for the sale of wine or malt beverages.
- C2. General Business District - The C2 General Business District is intended primarily for those commercial uses that require a location accessible to large numbers of people and that serve substantial portions of the community such as retail stores, veterinary clinics, funeral parlors, theaters, motels.
- OI. Office Institutional District - This zoning district is established to provide a location for offices, institutions, and limited related retail business and service activities in buildings of high character in attractive surroundings. A building or land may be used for the following purposes: professional and business offices, public offices, semi-public institutions such as churches and clubs, cultural facilities, accessory retail business and service establishments such as restaurants and drug stores, accessory parking garages and parking lots.
- M1. Light Industry District - The M1 Light Industry District is comprised of lands that are located on or have ready access to a major street or state highway and are well adapted to industrial development but whose proximity to residential or commercial districts makes it desirable to limit industrial operations and processes to those that are not objectionable by reason of the emission of noise, vibration, smoke, dust, gas, fumes, odors or radiation and that do not create fire or explosion hazards or other objectionable conditions

M2 Heavy Industry District - The M2 Heavy Industry District provides a location for those industrial operations and processes that are not public nuisances and are not dangerous to health, safety or the general welfare. The M2. heavy industry district shall be located on or have ready access to a major street or state highway. The following uses are permitted: all uses permitted in the M1. light industry district, all industrial uses that are not public nuisances and are not dangerous to the public health, safety or general welfare.

FH. Flood Hazard District - The FH Flood Hazard District is comprised of lands that are subject to periodic flooding. The intent of the regulation within this zoning district is to limit the use of such flood plain lands to: prevent flood damage to persons and properties and minimize expenditures for flood relief programs, flood control projects and flood damage repair, preserve drainage courses that will be adequate to carry storm water runoff from existing and future land developments, prohibit landfills or other obstructions to the flow of floodwaters, except those included in the special permitted uses listed in the resolution. Permit uses that are appropriate on flood-plains and utilize effectively this valuable county resource.

Let's see,
what's the difference
between an RM
and an R-100?



and social reasons why the property should be used differently than was designated in the zoning ordinance. These public hearings are important in that they allow all sides of a land use question to be presented. After hearing the arguments the Zoning Board of Appeals then makes a recommendation to the County Board of Commissioners which carries out the decision.

Your Choice

In the final activity of this section, "Zone of Contention," you will have an opportunity to participate in a land use decision and follow the procedures for a rezoning request. Whether or not to rezone a parcel of land and change its use-potential is often a serious issue to the people who live in the immediate vicinity of the land. Too often citizens throughout the community who will ultimately be affected by these decisions take no interest in the issue until it is too late.

A change in the restrictions on the use of ten acres can change the general environment of hundreds of acres surrounding it. Consider, for example, a change of zoning from agricultural-residential to multi-family residential. Such a change can greatly increase the number of people living in an area, and, consequently, increase the need for roads, schools, stores, parking areas, water service, etc. Or, consider changing the potential development of an area from neighborhood business zoning to heavy industry zoning. This could

bring about serious changes in the flow of transportation in and out of the district and in the air, water and soil as a result of the number of employees coming to work each day, the production process, and the waste materials.

Public notice and public hearings are required by law before any change in restrictions on land use can take place in Gwinnett. In "Zone of Contention" you will be confronted with the proposed special zoning of a piece of land not far from Berkmar High School. When you get into the act of deciding whether this proposed change is a good one for Lilburn and the county, you will have to evaluate the "trade-offs." That is, you must try to figure out what a change in the use of this land will cost the community -- ecologically, economically and socially -- and what benefits it will bring to the community.

Making A Decision

Residents who live anywhere near such areas of proposed change can determine whether to support or oppose the zoning change by weighing the advantages and disadvantages. How will rezoning affect the surrounding land and the surrounding community? What will the change in zoning do to the physical environment? What changes will it bring about in the land surface, the ground water and the air we breathe? Will the beauty of the area be affected? And what changes are likely to develop in the social and economic environment? Will it bring more jobs to the community? Will it attract more population to the community?

Will it cost more in taxes because the change will eventually require more schools, an extension of the water system, an addition to the sewerage system or an increase in fire and police protection? Or will it bring more tax support into the community? Will it contribute to community stability?

This is the kind of difficult decision-making that confronts every Gwinnett County citizen who takes the responsibility of watching out for the environment he lives in. However, it is through the awareness and actions of numerous Gwinnett Countians that we can hope to avoid the unhealthy and uncomfortable conditions described in the projected 1986 news items which we read at the beginning of this book. The choice between mere survival and a quality life is easy to make. But the numerous responsibilities and choices which follow require environmental curiosity and knowledge and a real commitment to environmental action. It is only through such interest and action that this county community, the state and the rest of the nation can hope to protect the quality of life in our future.

Think About This

Quoted below is Ian McHarg, an ecologist and landscape architect. Read through this short quotation from his book, Design With Nature and answer the questions below.

"We need, not only a better view of man and nature, but a working method by which the least of us can ensure that the product of his works is not more despoliation.

It is not a choice of either the city or the countryside: both are essential, but today it is nature, beleaguered in the country, too scarce in the city which has become precious. . . .

Let us abandon the self-mutilation which has been our way and give expression to the potential harmony of man-nature. The world is abundant, we require only a deference born of understanding to fulfill man's promise. Man is that uniquely conscious creature who can perceive and express. He must become the steward of the biosphere. To do this he must design with nature."

1. Give several examples of what McHarg calls the "self-mutilation" which has been our way of living.
2. In what ways could people serve to watch out for the large ecosystem we live in (or in McHarg's terms, serve as stewards of the biosphere)?
3. How can the people of the Gwinnett County community attempt to design with nature?

CARTOON DELETED FROM THIS SPACE
DUE TO COPYRIGHT RESTRICTIONS.

WHOSE

RESPONSIBILITY

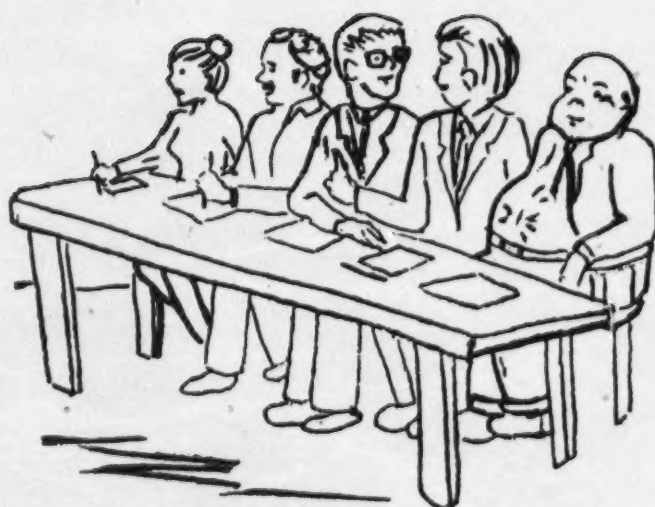
IS IT?

He does not think there is anything the
matter with him because
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we have to help him realize that,
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From Knots, by R.D. Laing, Pantheon Books, 1970

Can you relate the statement above to the environmental responsibility of individuals? How many people do you know who say that environmental problems are "important" but then assume that they personally cannot do anything to prevent further damage to their surroundings?

ZONE OF CONTENTION -- A CLASSROOM SIMULATION



Zone of Contention -- A Classroom Simulation

"I just built a \$50,000 home around the corner. I shudder to think what this will do to my property values."

* * *

"Who ever heard of putting a landfill next to a public school? Kids have enough distractions. Why add noisy bulldozers and trucks to the area to distract them more."

* * *

"My apartment is just down the road from there. How would you like to look out your window at piles of garbage every day?"

* * *

"Another landfill is just what we need. I'm tired of having to drive twelve miles to the Arnold Landfill every three days to dump my trash."

* * *

"Well, I'm just not sure what this will do to the water and the soil in that area. I would like to check over the drainage maps first and maybe check into the soil type."

* * *

"Good news. A new landfill. Now maybe folks will stop dumping their garbage on my property!"

* * *

"At first I was really against having a dump over in this area. But I read in the paper that a sanitary landfill isn't the same as a dump. I guess if Sanoclean runs it right, it probably would be okay."

* * *

"I'm not real happy about it, but at the price we have to pay for progress."

* * *

These remarks give you some idea of the controversy that has arisen over a proposal by two landowners to obtain special exception zoning and place a landfill operation on their land. The location is real. The situation is quite possible. The problem is a real one in any growing community. *However, all of the names and the case itself are fictional.* The case is presented to give you an opportunity to think

through the alternatives, weigh the strong points against the weak points and make a decision about what you would say and do in a hearing like this.

You will play the role of an interested citizen in this simulation of a landfill zoning case. In this role you will contribute to a land use decision in Gwinnett County.

The site under consideration is located approximately two miles from Berkmar High School on the south side of Cruse Road. It is bounded on the east by Sweetwater Creek and on the west by land on which the new high school is being built.

Members of the class will act out the roles of the people involved in deciding whether this piece of land should be used as a sanitary landfill. Use the knowledge that you have gained from environmental studies in science and social studies. But also try to effectively play the role you have been given. The procedures that you will follow are similar to those that would be followed in a real "special exception" zoning case.

The Case

On Cruse Road just about two miles from Berkmar High School there is a 35.6 acre plot of undeveloped land located next to the land on which the new high school is being built. (See large map on wall)

The joint owners of this land, Howard and Altman, wish to lease it to the Sanoclean Landfill Corporation of Gainesville. Presently the land is zoned M-1 or light industrial zone. The owners have applied to the Zoning Board of Appeals for a "special exception" zoning which would allow them to have the land used as a sanitary landfill.

Following the application for special exception zoning, a sign was posted on the property announcing the application and the fact that a public hearing would be held in two weeks. The application was also advertised in the Gwinnett Home Weekly. The hearing will be held tomorrow before the Zoning Board of Appeals.

A number of residents of the Cruse Road-Pleasant Hill area who are aware of the proposed zoning change have organized to oppose the change. School board members are concerned about the landfill's location near the new high school. Some local citizens are concerned about the general effects on the water and soil in the surrounding drainage area.

On the other hand, county leaders concerned about the waste disposal problems in the area are interested in having another landfill to receive the trash and garbage of this populated section of the county.

The owners contend that the Sanoclean Corporation will run a completely sanitary landfill and that its operation will not in any way jeopardize the beauty and healthful environment of the Cruse Road neighborhood. They claim that the landfill will effectively serve the highly populated area north of Cruse Road and will therefore be a benefit to the community.

Many arguments, pro and con, have emerged, and a large turnout at the public hearing in the county courthouse is expected.

The Simulation

"Zone of Contention" is designed for 3-4 class periods. It takes place in three sequential stages. There is a short initial meeting of the Zoning Board of Appeals followed by a period during which special-interest groups meet to study the situation. The final stage consists of a second meeting of the Zoning Board of Appeals. Most of the debate over the issue takes place during this third stage. Finally, the Zoning Board makes its decision.

Each member of the class has a card describing the role he or she is to play during the game. This card will give you information about occupation and interests as well as a statement concerning your opinions. You should make every effort to stay "in character" throughout the play, responding to events and the other characters in the way your character would most likely respond. You should, however, listen carefully to arguments presented by both sides in the controversy. READ YOUR ROLE CARD CAREFULLY.

Each person will be a member of an interest group. There are three interest groups which will meet and gather information in preparation for the final hearing. When you read over your role card you will see that your interest group is listed at the bottom.

Some of the questions that should be considered in each group are:

1. Do we want or need another landfill in Gwinnett County?
2. Do we want the landfill located at this site?
3. Is this site appropriate for use as a sanitary landfill?
4. What would be the consequences -- both environmentally and economically -- of locating a landfill on this property?

Consider each of the questions from the viewpoints of the role which you are playing. Then review the full list of characters involved to get an idea of other people's interests.

The three stages of the simulation are described below:

Stage I

- A. Zoning Board of Appeals Chairman calls the meeting to order and gives a brief statement describing the reason for the hearing.
- B. The land-owners and representative of the landfill corporation then make initial statements.
- C. Two home-owners may present counter arguments.
- D. The Chairman of The Zoning Board suggests that the crowd of participants take time to study the situation in depth.

Stage II

Special interest groups meet to research the situation in more depth and to prepare arguments for the final hearing. The following chart indicates the groups that meet together and gives some suggestions to guide discussions. You do not have to limit yourselves to the suggestions given nor do you have to reach any kind of agreement as a group. The purpose of this stage is to allow everyone to become familiar with the situation and to "get into character."

Group I: County Officials

Bell	Merritt
Blake	Miller
Fountain	Morgan
Harper	Phillips
Hayes	Stanley
Livingston	Widener

Group II: Pre-landfill

Altman	Janecki
Calhoun	Sanders
Howard	Wiley

Group III: Con

Allen	Metcalf
Bernstein	Michaels
Burton	Monroe
Caproni	Morrison
Evans	Victor

Stage III

The Zoning Board reconvenes. Board members may ask questions or call for expert opinions from anyone in the audience. Any citizen may also raise questions or express an opinion before the Board. Remember to "stay in character." After the hearing, the Zoning Board of Appeals will vote and report the decision to the group.

Blake - Member of Zoning Board of Appeals

You are a member of the Zoning Board of Appeals. You were appointed by the County Commissioners to serve on this important board which considers all request for rezoning or "special exception" zoning in public hearings. In this special exception hearing, your Board's decision is final.

You were a farmer for a number of years, and then five years ago you sold your farm to go into the farm machinery and large equipment business. Generally you are concerned about the neglect of the soil and consider the county to have "overdeveloped" into residential sub-divisions and industries. On the other hand the sale of bulldozers and other large equipment used in development can boost your business which had been in a decline in the current recession year.

Morgan - Member of Zoning Board of Appeals

You are a member of the Zoning Board of Appeals. You were appointed by the County Commissioners to serve on this important board which considers all request for rezoning or "special exception" zoning in public hearings. In this special exception hearing, your Board's decision is final.

You are a lawyer in a family law firm. You are known throughout the county as a leader in environmental causes. You are a member of the National Wildlife Federation and the Sierra Club and are active in the Georgia Conservancy. You are an outspoken advocate of strong enforcement of the ordinance against dumping.

Phillips - Member of Zoning Board of Appeals

You are a member of the Zoning Board of Appeals. You were appointed by the County Commissioners to serve on this important board which considers all request for rezoning or "special exception" zoning in public hearings. In this special exception hearing, your Board's decision is final.

You are an established building contractor who has built many of the larger industrial buildings and business offices in the county in the last ten years. You openly encourage more development for its general economic benefits to the county. You feel that an expansion of industrial and business growth will create more jobs and more income for the county.

Harper - Member of Zoning Board of Appeals

You are a member of the Zoning Board of Appeals. You were appointed by the County Commissioners to serve on this important board which considers all request for rezoning or "special exception" zoning in public hearings. In this special exception hearing, your Board's decision is final.

You are the head of a family plumbing firm. Nearly forty years ago your grandfather started the plumbing business in the county and your family has resided in Gwinnett ever since. You are convinced that growth has brought great progress to the county. Currently you are concerned about the problems of garbage and trash disposal. Disposing of discarded plumbing fixtures, old pipes and such junk has been inconvenient and rather costly since the nearest landfill is privately run and 23 miles from your business.

Miller - Member of Zoning Board of Appeals

You are a member of the Zoning Board of Appeals. You were appointed by the County Commissioners to serve on this important board which considers all request for rezoning or "special exception" zoning in public hearings. In this special exception hearing, your Board's decision is final.

You own a large department store in a large shopping center in the county. Generally you are in favor of rezoning land in and near residential areas to provide the convenience of business or institutional development close to each large subdivision. Recently you have been quite concerned about the inadequacy of garbage and trash collection in the shopping center. You have complained to the Board of Commissioners that the garbage collectors franchised by the county tend to skip the dumpsters in the shopping center on some collection days. You have been encouraging the commissioners to consider some new system of collection.

Fountain - Chairman of Board of Commissioners

You are now serving in your final year as Commission Chairman, a full-time elected position for which you plan to run again. It is, therefore, very important for you to be familiar with the likes and dislikes of the voters. You believe that growth means progress and have encouraged expansion of the business and industry community in the county.

You are joint-owner in a successful heating and air-conditioning firm, now run by your partner. You and your family will not be personally affected by a new landfill, since you live in Lawrenceville. However, you do often hear complaints from Gwinnett Countians about the current sanitation system.

You have held your position as Health Inspector for nearly twenty years. You plan to retire in two more years. You are very outspoken in your opinion that Gwinnett started going "downhill" in the 1960's and the descent has been growing more rapid during every year since. You have kept yourself knowledgeable about improvements in public health through the years and are a conscientious citizen in your own way. Having had a considerable amount of experience with the actual operation of landfills, you are concerned with the possible health hazards that could result from locating a landfill so near a highly-populated area.

Bell - Administrative Assistant

You are the newly appointed administrative assistant to the Board of County Commissioners. You have had special training in public administration and five years experience in administration in another Georgia county.

Your job is to take care of the day-to-day tasks of running the county government. The commissioners depend on you to get the facts on any issue that arises and help provide them with details on various county government operations. Because recent press coverage has highlighted the problem of dumping in the county, the Chairman of the Board of Commissioners has asked you to look into the county's waste disposal program and present your evaluation of it.

Altman - Land Owner

You and your business associate, Howard, purchased the Cruse Road property eight years ago when this area was almost completely undeveloped. You thought the land might be a good investment. The land was not considered good land for residential development, but it was relatively inexpensive and located in a section of the county that was obviously increasing in population.

You were contacted by the Sanoclean Corporation last year and offered a good annual income from leasing the land to run a landfill on it. Last month you and Howard met with corporation officials to work out an agreement. Now obtaining permission from the county Zoning Board is an important step in completing the agreement.

You and Howard have invested in other land in Gwinnett and Rockdale Counties. You live in Gwinnett and run a wholesale paper supplies company in Norcross.

Howard - Land Owner

You and your business associate, Altman, purchased the land on Cruse Road eight years ago for an investment. Because you live in Atlanta, Altman has overseen land investments in Gwinnett.

You had previously encouraged Altman to put the land up for sale, but when he called you last month about the Sanoclean leasing deal, you considered that this land might improve in value in the long run. You are convinced that developing the property as a landfill will improve its surface features and eventually after it is all filled in it will be more valuable.

You own the apartment complex across the road from the proposed landfill site. You recognize the fact that a landfill is needed in the area near Cruse Road, but object to its location so near to your complex. You fear that property will be devalued and that the area might be less desirable to potential tenants. You attempted and failed to purchase the property in question last year, planning to put up a new apartment complex there.

Burton - Environmental Protection Division Representative

You live in a subdivision north of the Cruse Road area. You work with the Environmental Protection Division of the Department of Agriculture in Atlanta. You have been asked to appear before the board in the interest of a group of citizens who are concerned by the ever-increasing development in the Cruse Road area. You hold a Ph.D. degree in Environmental Science from the University of California at Berkeley and did your undergraduate work in Zoology at the University of Georgia.

Monroe - Farmer, Member of Board of Commissioners

You are 52 years old and have lived in Gwinnett County all your life. You have three married daughters and four grandchildren, all of whom live in the county. You own a moderate-sized farm near Snellville, which is operated by one of your sons-in-law. You consider yourself semi-retired, but serve as a member of the Board of Commissioners because you are actively concerned about the county.

You have witnessed the local population explosion and feel that Gwinnett does not need any more people or industry. You have been distressed by the acres and acres of fertile farmland and forest that have been destroyed for development in the name of progress. For this reason, you are intensely interested in any land use decisions.

Evans - Eastern Electric Plant manager, Member Board of Commissioners

You moved to Gwinnett County from Ohio only five years ago to become plant manager at Eastern Electric. You are rather young to hold such a position; however, you are highly intelligent and ambitious person. You became actively involved in the community almost immediately upon your arrival, bringing to your civic activities the same enthusiasm and vitality that you show on the job. You are presently a member of the Board of Commissioners and plan to run against Fountain in the upcoming race for Commission Chairman.

You are for adopting a "no-growth" policy in Gwinnett County and feel that the county should provide sanitation service for the citizens.

Livingston - Agent of Resource Conservation and Development Service

You are 28 years old and a recent addition to the staff of the Gwinnett County Resource Conservation and Development Service, a division of the U.S. Soil Conservation Service. You received a master's degree in Agronomy from North Carolina State University with emphasis on soil conservation. You worked for three years as an assistant conservationist in Raleigh before being transferred to Gwinnett. You consider that it is part of your job to be interested in any actions taken in the county which could have negative environmental effects.

Stanley: State Soil Conservationist

You are a State Soil Conservationist for Georgia, with an office in Athens. You have been asked by Livingston to study the situation in question, since you have more experience in the area. You have lived in the North Georgia area for nearly all of your life and are familiar with its environmental peculiarities.

Hayes - Professional Planner

You are a professional planner who works for the Planning and Zoning Division of the county government. You are a trained and experienced community planner who left a city planning job to take the job in Gwinnett in 1970 when the major land use plan for the county was developed.

You are generally opposed to mixing residential, commercial and institutional zoning in patchwork patterns and strive to encourage the development of protected strips which protect property values and economic and social development.

Widener - Professional Planner

You are a professional planner who works for the Planning and Zoning Division of the county government. You joined the Gwinnett planning staff after completion of training at a large southeastern university two years ago.

Generally you favor cluster zoning in the areas not yet developed. Also you encourage the commissioners to consider setting aside more park area and open land as the county develops. You are currently involved in preparing a report for the county administrator summarizing solid waste disposal problems in the county and suggesting possible alternatives for county action.

Metcalf - ARC Representative

You are a member of the professional staff of the Atlanta Regional Commission. Trained as a geologist, you were hired on the ARC staff two years ago to aid in the preparation of information summaries and maps of the land characteristics of the metro region. You recently completed studies of drainage, rock and soil characteristics of the area.

Organized homeowners who want to block the proposed landfill location have called you to come to the hearing and testify about the potential negative impact the landfill will have on the area.

Morrison - School Board President

You are the current president of the county Board of Education. Recently while checking over progress on the construction of the new high school on Cruse Road you noticed the sign on the adjacent property advertising the hearing for special exception zoning. You are very concerned that the proposed development of that land is for a landfill. Although this proximity of a landfill will have its advantages for easy waste disposal by the nearby high schools, you are concerned about the traffic hazards and the possibility that the landfill will not be properly operated so as to keep the area sanitary and healthy. Many school board members have objected to the location of the landfill in this school zone, and you plan to attend the hearing to listen and offer some remarks.

Michaels: Home Owner

You are a private home owner in a subdivision located near the proposed landfill off Cruse Road. You have organized other home owners to fight against the special exception request. You fear that garbage trucks and commercial trucks driving in and out of the landfill will cause a real traffic hazard for both children and adults. Also, you are concerned that trash and garbage from these vehicles may be blown off or drop off onto the surrounding property of the area making the whole neighborhood unsightly.

Caproni - Home Owner

You are a new home owner who lives on Pleasant Hill Road not far from the intersection with Cruse Road. You are greatly concerned about the effect the landfill may have on the value of your property and that of your neighbors. You have joined with Michaels in organizing local residents to fight against the location of a landfill in the area. You plan to attend the hearing to speak against the landfill.

Janecki - Representative of Sanoclean Landfill Corporation

You are 55 years old, married with two adult sons. You have held a variety of occupations in your life, but worked as a truck driver for 15 years. Through a combination of thrift and wise investments, you were able to form Sanoclean in 1968. You currently operate four landfills in surrounding counties. You personally hire and train your operators. The Cruse Road property with its gullies and pits appears to be a good location for another fill.

Calhoun - Attorney for Land-owners

You are an Atlanta lawyer hired to handle this case for the land-owner who wishes to have his property developed as a commercial landfill. You have looked into legal aspects of this case and found that the zoning regulations of the county allow a proposal for landfill to be considered in any type of zoning except flood hazard zoning. You have advised your client to go before the Zoning Board of Appeals and request special exception zoning of his M-1 zoned land.

You plan to attend the hearing to argue that this procedure is entirely acceptable under the law. You also hope to convince any objectors that the commercial landfill will be a sanitary operation run according to state legal standards.

Wiley - Construction Engineer

You are 23 years old and have recently received a degree in Construction Engineering from Georgia Tech. You were a senior at Berkmar during the first year of its operation and feel loyalty to the school. You fear that the locality might be degraded by the location of a landfill there.

Your apartment faces Cruse Road and directly overlooks the proposed site. You are concerned about the possibility of foul odors, loud noises, and destruction of the beauty of your view. You have however, explored the site and feel that it would probably not be useful for any other kind of development. It is also possible that, when the landfill is completed, the condition of the land will be improved. You want to know more about the situation before formulating an opinion.

Sanders - Realtor

You are a realtor, whose financial success is more or less dependent upon population growth and property values. You moved to Gwinnett twelve years ago from Atlanta, having foreseen the suburban migration as an inevitable result of ever-increasing crowding in Georgia's capital.

You believe that the proposed landfill would have little effect on property values if operated properly. Sanoclean plans to leave a stand of trees adjacent to the road, shielding the operation from view. Daily covering of the trash should effectively prevent foul odors.

You believe that most home owners will be glad to have a landfill so conveniently located.

Victor - Apartment Dweller

You are 32 years old, married, with twin 8-year-old sons. You are an accountant for a local business firm and have lived in Gwinnett for six years. You represent a group of concerned residents from the apartment complex across the road from the proposed site. You and your neighbors are concerned about the potential dangers that might exist for curious kids who habitually play together in that currently vacant lot. You also feel that development has already destroyed too much of the scenic natural areas of Georgia.

Allen - Insurance Salesperson, Member Board of Commissioners

You are 37 years old and parent of a 9-year-old son and a 13-year-old daughter. You own a \$40,000 home near the site under consideration. It is very likely that your daughter will attend the new school when it is built. You sell all types of insurance, but have done very well in recent years by concentrating your efforts in the area of property insurance. You are, of course, interested and concerned about the effects that a landfill would have on property values, especially since your company insures the apartment complex just across the road from the proposed site.
